# AMERICAN AGRICULTURIST

FOR THE

## Farm, Garden, and Household.

"AGRICULTURE IS THE MOST HEALTHFUL, MOST USEFUL, AND MOST NOBLE EMPLOYMENT OF MAN."—WASHINGTON.

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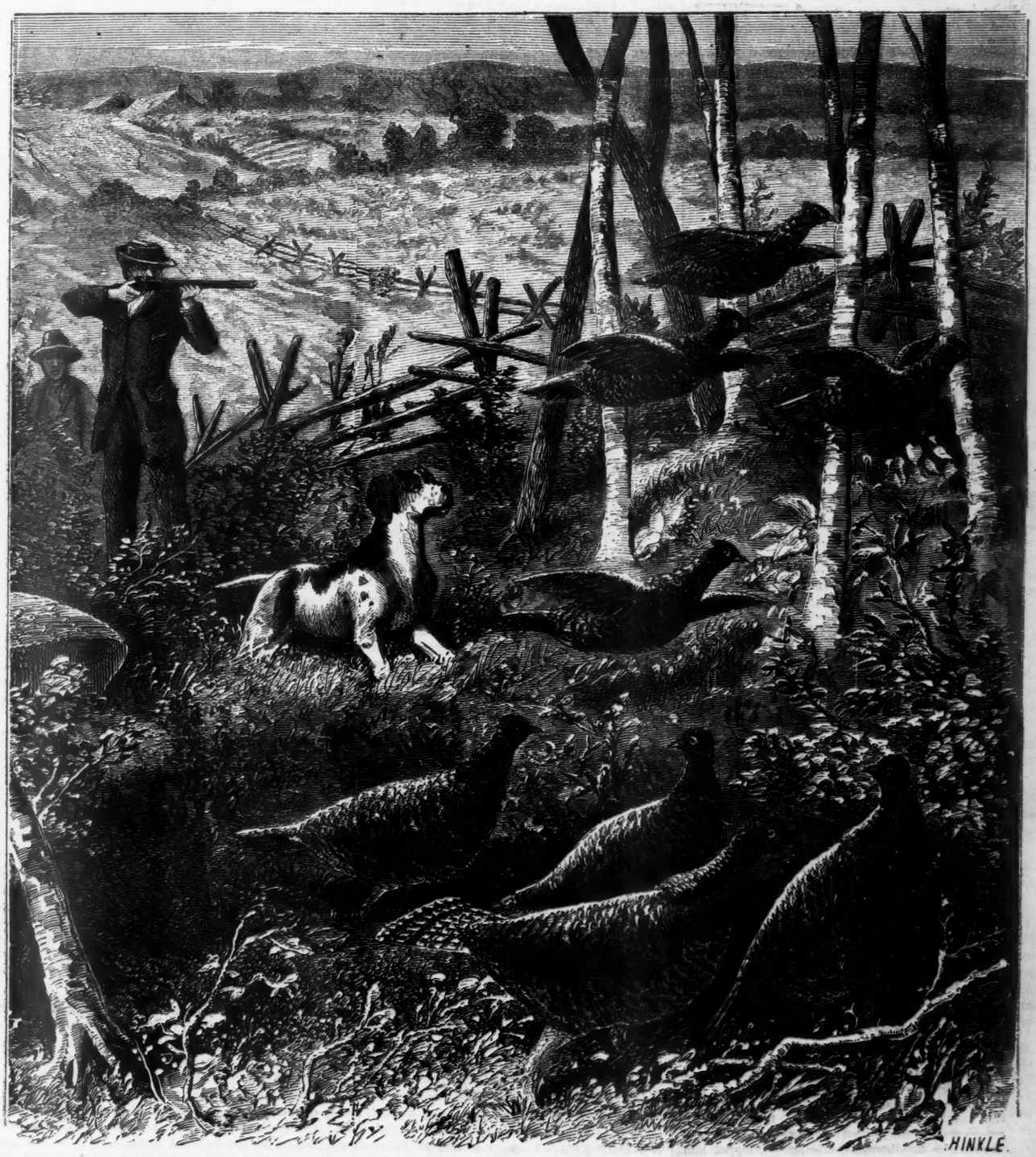


GROUSE OR PARTRIDGE SHOOTING.— *Drawn by Edwin Forbes, and Engraved for the American Agriculturist.*—(See page 871.)

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**Repairing Shingle Roofs.**—"C. E. F.," Wilmington, N. C. A slightly decayed shingle roof may be temporarily preserved from further decay, by a good coat of thick lime-wash. A second coat of still thicker lime-wash, in which fine sand is kept stirred, will act as a further preservative, but the latter application should be renewed every summer. Painting does not help to preserve a roof, unless done on both sides of the shingles; if done on but one side, the moisture which penetrates beneath them, is kept there, and prevented from escaping by the coat of paint on the outside, and the shingles rot very rapidly. Lime is a good preservative for shingles, but crude petroleum is the best. The shingles, first thoroughly dried, may be dipped into it, or it may be put on after they are laid.

## Calendar for October.

| Day of Month. | Day of Week. | Boston, N. England, N. York State, Michigan, Wisconsin, Iowa, and Oregon. Sun rises. | Sun sets. | Mo'n sets. | N. Y. City, Ct., Philadelphia, New Jersey, Penn., Ohio, Indiana, and Illinois. Sun rises. | Sun sets. | Mo'n sets. | Washington, Maryland, Virginia, Kentucky, Missouri, and California. Sun rises. | Sun sets. | Mo'n sets. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | H. M. | H. M. | H. M. | H. M. | H. M. | H. M. | H. M. | H. M. | H. M. |
| 1 | F | 5 57 | 5 42 | 6 34 | 5 56 | 5 43 | 6 38 | 5 56 | 5 43 | 6 41 |
| 2 | S | 5 58 | 5 40 | 6 58 | 5 57 | 5 41 | 7 3 | 5 57 | 5 41 | 7 8 |
| 3 | S | 5 59 | 5 39 | 7 27 | 5 58 | 5 40 | 7 33 | 5 58 | 5 40 | 7 39 |
| 4 | M | 6 1 | 5 37 | 8 0 | 6 0 | 5 38 | 8 6 | 5 59 | 5 38 | 8 14 |
| 5 | T | 6 2 | 5 36 | 8 53 | 6 1 | 5 37 | 9 0 | 6 0 | 5 37 | 9 8 |
| 6 | W | 6 3 | 5 34 | 9 45 | 6 2 | 5 35 | 9 52 | 6 1 | 5 35 | 10 |
| 7 | T | 6 4 | 5 32 | 10 35 | 6 3 | 5 33 | 10 42 | 6 2 | 5 34 | 10 49 |
| 8 | F | 6 5 | 5 31 | morn | 6 4 | 5 32 | morn | 6 3 | 5 32 | morn |
| 9 | S | 6 6 | 5 29 | 0 6 | 6 5 | 5 30 | 0 11 | 6 4 | 5 31 | 0 17 |
| 10 | S | 6 8 | 5 27 | 0 53 | 6 6 | 5 28 | 0 57 | 6 5 | 5 29 | 1 2 |
| 11 | M | 6 9 | 5 26 | 2 3 | 6 7 | 5 27 | 2 6 | 6 6 | 5 28 | 2 9 |
| 12 | T | 6 10 | 5 24 | 3 15 | 6 8 | 5 25 | 3 17 | 6 7 | 5 26 | 3 19 |
| 13 | W | 6 11 | 5 22 | 4 26 | 6 9 | 5 24 | 4 26 | 6 8 | 5 25 | 4 26 |
| 14 | T | 6 13 | 5 21 | rises | 6 10 | 5 22 | rises | 6 9 | 5 23 | rises |
| 15 | F | 6 13 | 5 19 | 5 38 | 6 11 | 5 21 | 5 41 | 6 10 | 5 22 | 5 45 |
| 16 | S | 6 14 | 5 17 | 6 9 | 6 12 | 5 19 | 6 14 | 6 11 | 5 20 | 6 19 |
| 17 | S | 6 15 | 5 15 | 6 50 | 6 13 | 5 17 | 6 57 | 6 12 | 5 19 | 7 3 |
| 18 | M | 6 17 | 5 14 | 7 41 | 6 15 | 5 16 | 7 48 | 6 13 | 5 18 | 7 56 |
| 19 | T | 6 18 | 5 12 | 8 44 | 6 16 | 5 14 | 8 51 | 6 14 | 5 16 | 8 59 |
| 20 | W | 6 19 | 5 11 | 9 51 | 6 17 | 5 13 | 10 1 | 6 15 | 5 15 | 10 8 |
| 21 | T | 6 20 | 5 9 | 11 10 | 6 18 | 5 12 | 11 15 | 6 16 | 5 14 | 11 21 |
| 22 | F | 6 21 | 5 8 | morn | 6 19 | 5 11 | morn | 6 17 | 5 13 | morn |
| 23 | S | 6 22 | 5 6 | 0 7 | 6 20 | 5 9 | 0 11 | 6 18 | 5 11 | 0 16 |
| 24 | S | 6 23 | 5 5 | 1 30 | 6 21 | 5 8 | 1 33 | 6 19 | 5 10 | 1 36 |
| 25 | M | 6 25 | 5 3 | 2 36 | 6 22 | 5 6 | 2 38 | 6 20 | 5 9 | 2 39 |
| 26 | T | 6 26 | 5 2 | 3 41 | 6 23 | 5 5 | 3 41 | 6 21 | 5 8 | 3 42 |
| 27 | W | 6 27 | 5 0 | 4 45 | 6 24 | 5 3 | 4 41 | 6 22 | 5 6 | 4 43 |
| 28 | T | 6 28 | 4 59 | 5 49 | 6 25 | 5 2 | 5 45 | 6 28 | 5 5 | 5 44 |
| 29 | F | 6 29 | 4 57 | sets | 6 26 | 5 0 | sets | 6 24 | 5 3 | sets. |
| 30 | S | 6 30 | 4 55 | 5 28 | 6 27 | 4 59 | 5 34 | 6 25 | 5 2 | 5 39 |
| 31 | S | 6 32 | 4 54 | 5 57 | 6 29 | 4 58 | 6 3 | 6 26 | 5 1 | 6 10 |

PHASES OF THE MOON.

| MOON. | BOSTON. | N. YORK. | WASH'N. | CHA'STON | CHICAGO. |
|---|---|---|---|---|---|
| | D. H. M. | H. M. | H. M. | H. M. | H. M. |
| 1st Quart | 7 11 21 mo. | 11 8 mo. | 10 57 mo | 10 45 mo. | 10 15 mo. |
| Full M'n | 14 6 31 ev. | 6 18 ev. | 6 8 ev. | 5 55 ev. | 5 26 ev. |
| 3d Quart. | 21 9 29 mo. | 9 16 mo. | 9 5 mo | 8 53 mo. | 8 23 mo. |
| New M'n | 29 0 29 mo. | 0 16 mo. | 0 5 mo | 11 53 28th | 11 23 28th |


# AMERICAN AGRICULTURIST.

NEW YORK, OCTOBER, 1875.


If we were to believe the statements of the newspapers, which call themselves "Mercantile Journals," we should out of charity open our graneries and cribs, and invite those poor distressed people, the merchants, to walk in and help themselves, and thus be relieved from their distresses. We should feel almost guilty in the possession of so much wheat, and corn, and pork, as the newspapers insist that farmers are holding with such wicked pertinacity, while these poor merchants want all this produce so badly. "Everything is so dull," we are told by the mercantile newspapers, "money is so cheap," and "produce is so plentiful," that prices are ruinously high. Sometimes it is that money is so dear that these poor men can not afford to pay so much as they would like for our grain and pork. Just now it happens to be the other way. Fortunately farmers read the papers now-a-days, and when they go to market they are not so apt to say to the buyers "what can *you afford to give* me for this load of wheat?" as they were some years ago. It may be that the wheat crop all over the world will reach an average, and that the frosts have not injured our late corn crop, but this is very doubtful. Our wheat crop is not up to the average, oats are short, and if corn at husking time be found generally sound and uninjured by the early frosts, still there will be at best but an average crop. But all over Europe, and here as well as there, the cost of every bushel of grain harvested, has been increased ten per cent by the wet weather, and corn has been smothered by weeds, making its cultivation much more laborious. Much grain has been cut with the antiquated sickle or the scythe; old-fashioned cradles have been brought out, and the reapers have been useless; the ground has been so wet and the grain so tangled, that harvesting has cost very much more than it usually does. When grain is thrashed, some will be found light, and the quality of much of it will have been injured by sprouting in the shock. There are exceptions to this in some localities, but this is the general condition of things. This increase in cost of production, must be balanced by an increased value in every market, and farmers must not be misled by the complaints of mercantile papers, to suppose that in the coming down to hard-pan, they must fall faster and harder than any other class. With fair prices for our crops we shall do very well, although there will be little left for the bank to take care of. If prices are not equal to what the crops cost, there might be no compulsion to sell at a loss, and there will be none if farmers will do business on the cash system, and have no debts hanging over them. The trouble is, few farmers know what their produce costs them, and never will know this until they keep accounts.

## Hints about Work.

*Wheat and Rye* may still be sown, even in the northern states, while in the south there is yet ample time to put in this crop. For fodder, or for spring pasturing, rye or wheat may be sown up to Nov. 1.

*Rolling Wheat* is to be done with judgment. A cloddy surface, mellow underneath, is the best for wheat. If a roller is used at this season, it should be the corrugated kind; but we would rather defer rolling with a smooth roller until spring.

*Corn* that has not been cut, should be cut at once, if the stalks are to be used as feed for stock. Fodder that has been frozen while green, is neither nutritious nor wholesome for cattle, and the grain is not improved by hanging on the uncut ripe stalk.

*Husking Corn.*—Hall's husking gloves, if they have once been used, will be considered indispensable, as they will save their price in one season in lessened cost of husking, to say nothing of the protection they give to the hands. After some experience in putting corn away in the barn unhusked, to husk at leisure afterwards, we would never repeat it. A loss through moldy corn can hardly be prevented. Husk early, and leave the fodder to cure in the field.

*Potatoes.*—The wet season has caused some rotting of potatoes, and much scab in highly manured fields. It would be well to dig the early crop at once, and if any are found diseased, use the worst by boiling them for pigs, and scatter fresh dry-slacked lime over the others in the cellar. When touched with the rot, they are safer in the cellar or root house than in a pit. Potatoes are generally worth 25 cts. a bushel to feed when boiled. It is not economy to sell them for less than that price.

*Fall Plowing* should be pushed ahead on every fine day. Encourage the fowls to follow the plow, and if a few crows or crow blackbirds alight on the field, do not scare them away. They are doing good service in devouring grubs, beetles, and cut worms. If a farmer can teach a score or two of fowls to follow him in the furrow, they will destroy hundreds of insects every day.

*Drains.*—Open drains will be choked with weeds at this time, and will need thorough cleaning out. This should be done before heavy rains occur, and while the ground is comparatively dry. The outlets of under-drains should be cleared of weeds and other obstructions.

*Clearing up* of rubbish in the fields and around fences, should not be delayed, and the corn husks, old straw bands, leaves, etc., which lie about, should be raked together methodically, with a horse rake, and burned. This is more important where chinch bugs abound, because these pests hide in such rubbish, and may thus be destroyed in myriads.

*Buildings.*—Sheds, stables, pens, and poultry-houses, and the rubbish heaps about the house and barns, should all be cleaned up, and the scrapings used as top-dressing on wheat, or go to the compost heap. Stables should be repaired, white-washed, and made comfortable, broken windows glazed, and doors made tight. Warmth is a great economizer of food and comfort, a great help to health and thrift.

*Live Stock.*—Different kinds of stock should be kept separate both in the fields and yards. Heavy losses are always occuring from allowing horses, cows, sheep, pigs, and fowls to run in one yard. Horses in their play will kick or scare cows, and a cow near her time, may lose the calf in consequence; cows will hook sheep; pigs will kill and eat lambs and chickens; and small stock are trodden on by the heaviest animals. In the arrangement of the yards for winter, this should be

thought of, and plenty of room given each kind of stock by itself.

*Colts* should now be handled carefully, and taught to lead by the halter. They should be treated with the greatest kindness and gentleness, and a little extra feed be given, now that the pastures are dry and hard. A pint of crushed oats, or oats and rye bran daily, will be a great help to them.

*Milch Cows.*—As the pastures become poor, two quarts of meal and bran, per day, should be given to each cow. It is supposed to be "natural" that cows should shrink in their milk at this season. It is "natural" that they should do this when their food shrinks, or when, by exposure to cold rains or frosty nights, a portion of their food is taken from making milk to keeping them warm, but in no other sense. It is poor economy to starve a cow now, and throw away food in feeding her up again in the spring. Old grass has much less nutriment in it than young fresh grass, and the difference must be made up by other feed. Read Prof. Atwater's articles on feeding stock carefully and thoughtfully.

*Swine.*—Pork is high, and must be high for some time. But when the bulk of the crop comes upon the market, it may not keep its present price. Those who turn off their hogs quickly, will probably make the most money. At any rate, they will make their pork cheaper. It is the quickly fattening animal that pays, and this is precisely where it pays to raise pigs from pure bred boars, because they grow and turn feed into pork quickly.

*Store Pigs* should be pushed ahead as quickly as possible, before cold weather. One pound of food now, is worth two in January, in making flesh, and the growth next season will be in proportion to the growth made now. Young pigs will be brought on quickly by giving them a mess of skim milk and cooked meal, after having fed them with cooked mush, cold, without milk. This tempts them to eat more food than they would otherwise do.

*Sheep.*—Fine wool is but 44 cents a pound, which is lower than it has been since 1857. Yet we would not kill off Merino ewes. But we would, for one season, shut up our Merino rams, and buy or hire a Cotswold, and raise some cross bred lambs. There are ups and downs in all businesses, and the too common disposition to discard a staple thing because it is temporarily out of favor, is one of the great faults of our farming. It is especially so as regards sheep keeping and wool growing.

*Breeding Ewes* should be put to the ram in October, for March lambs. If lambs are not wanted so early, the ram should be kept apart another month. Where flocks run out the whole season, as in parts of the west and south, it is better for the lambs to come in April and early in May. There are fewer losses through cold and late storms.

*Poultry.*—The hen-house should have a thorough cleansing and whitewashing, to get rid of vermin, and the fowls should be well fed, if plenty of eggs are wanted for the holidays. It is too late to feed hens just when eggs are looked for. At the end of the month turkeys and fowls for the "thanksgiving" market should be put in coops and fed with soft food. Corn-meal boiled in milk, will produce very white and sweet flesh. Poultry thus fed, may be made as fat as possible in three weeks.

*Sundry Matters.*—Everything about the granaries and corn cribs should be made safe against vermin. Several cats may be fed at the cost of feeding one dog, and as they will earn their feed far more profitably, it will pay to encourage a few cats about the farm. Make holes where they can get in and out of the buildings and under them, but a foot or more above the ground, that skunks may not take possession. Procure a safe lantern, and do not burn kerosene in the barn and stables. A candle lantern is the safest. Provide hooks upon which to hang the lantern in safe places. Cut and grind all the fodder and feed when it can be made to pay. Give salt to the stock regularly but sparingly. Half an ounce a day, is a safe allowance for large animals. See to the water supply, and do not let the wash from the roofs flood the barn-yard. Observe closely, and think about what you see. The result of this is what is called experience, and the more a man has, the more profitable his labor ought to be.

## Work in the Horticultural Departments.

Now is ripeness, the fullness of the season, and the harvest! While we look back with satisfaction upon the labors of the season now closing, we must also look forward to those of the season which, after a period of rest, will open anew. The cultivator works with faith in the promise that seed time and harvest shall continue, and with faith too, that whatever advocates of development may claim to take place in uncounted ages, so far as he is concerned, like will produce like. There is no department in which much work of anticipation may not be done, and it will not only save time, which in spring is always crowded, but work done now is much better done. In these golden October days, when it is a pleasure to be in the open air, one can do much more than in the cold, drizzling, uncertain days of April. Of course many things must be done in spring, and at no other time, but there is enough which can be done now to keep all hands busy until cold weather sets in.

### Orchard and Nursery.

*Picking* is the pressing work in the orchard this month. The fruit-grower should know the peculiarities of each variety; some must be marketed at once, some autumn varieties come into eating condition in a week or two after picking, while others keep into early winter. The latest or winter sorts should be left on the trees until there is danger of hard frosts, or the readiness with which the fruit and the leaves part from the tree shows that growth is complete and the fruit has nothing more to gain by hanging. We have often insisted upon the importance of

*Assorting*, but it is a matter that cannot be too often repeated. No work done by the fruit-grower will *pay* so well. If you doubt it, put up 10 lbs. of fruit as it comes from the tree, and assort the same quantity, making 5 lbs. of extra, 3 lbs. fair, and 2 lbs. seconds, and note the returns of the two lots. A few poor apples will spoil the sale of a barrel of good ones; the whole will be judged by the poorest.

*Winter Fruit*, whether apples or pears, must be kept as cool as may be and not freeze; do not put it into the cellar until cool nights make it advisable.

*Pears* vary more, and need more careful watching than apples, and it will pay the grower to study the peculiarities of each sort. New half barrels lined with white paper, with the fruit packed in solid by hand, are the most profitable packages for all except fine specimens of high colored fruit, such as Beurré Clairgeau, Beurré d' Anjou, etc.; these should be wrapped singly in soft paper, placed in single layers in shallow boxes, and sold by count.

*Ordering Trees*, whether planting is done in fall or next spring, is advisable now. The trees are taken up in less hurry, they are less delayed in transportation, and when at hand can be set at once or in spring as may seem best, they may be kept until spring if

*Heeled-in*, just as safely as if they stood in the nursery. A trench or ditch is opened in a place where water will not stand; the trees are laid in one at a time, in a slanting position, (about 45°), covering the roots of each with fine soil; each lot of varieties should be separated from the next by a marking stake, so that there will be no confusion. See that earth is well filled in among the roots and no hollows left, and before cold weather the earth should be banked up well around them.

*Planting and Varieties.*—Refer to the notes given last March. What is said there is equally applicable now. The question of fall planting must be governed by locality; but for all but stone fruits, except where the winter is very severe, fall is the preferable season. Choose small thrifty trees.

### Fruit Garden.

*Blackberries and Raspberries* start so early in spring that it is better to set them in fall, as they receive a check if disturbed in spring unless they are taken up very early. If it is desired to propagate, then root cuttings should be made this month or next, when growth has ceased. Cut the roots into two or three inch pieces and pack in a box with alternate layers of earth. Bury the box where frost will not reach it, and water will not stand. Next spring the pieces are to be planted in nursery rows. In propagating

*Black Caps*, a little earth should be thrown over the tips which touch the ground, to prevent the wind from blowing them about.

*Currants and Gooseberries.*—About a year is gained by putting in cuttings of these now, instead of next spring. Make cuttings six inches long, of this year's growth, set four inches apart, in rows, leaving one bud above the surface. If the soil is properly packed, crowded firmly against the cuttings, every one should make a plant.

*Grapes.*—We get numerous inquiries asking how to keep grapes, without any mention of the kinds. It is of no more use to try to keep Concords until Christmas than it is to try Early Harvest Apples. Catawba, Isabella, Diana, and Iona are the best keepers in general cultivation; Walter and some less generally disseminated, also keep well. Concords, Delawares, and all others with a tender skin, will spoil. The keeping sorts are picked when fully ripe, allowed to "cure" a few days in shallow trays, in order to toughen their skins; they are then packed in boxes, (usually 5 lbs.), and kept at as low and even a temperature as possible.

*Strawberries.*—Mulch before very severe weather.

*Vines* may be planted now. Prune after the leaves fall, and save the wood for cuttings if required. Where practicable it is well to remove the vines from the trellis, lay them down and cover with a few inches of earth.

### Kitchen Garden.

As soon as the crop is removed from a piece of land, it should have a good dressing of manure and be plowed or spaded. This not only in good part prepares the land for spring, but turns under various weeds that would continue to grow until freezing weather. All clearing up of rubbish that can be done now will save time in spring, and destroy various insects which pass the winter in the pupa state among litter. It is well to have a burn-heap to which all rubbish, brush, and the like, should be taken and burned, and the ashes saved for garden use. A garden of considerable size needs a place where three *heaps* can be made; (1), the compost heap where all green refuse and weeds without seeds, sods, and the like may be converted into manure. (2). The burn-heap, where seed-bearing weeds, if any get large enough, can be burned with the rubbish, and (3), a heap for stones that are raked out of the soil, and which may come in play in making paths, and for other uses.

*Asparagus* beds may be set in the fall as well as in spring. Give old beds a thick coat of manure before winter, and spade or fork in lightly.

*Beets and Carrots.*—Those for table use should not be touched by frost; they may be kept fresh and plump by packing in sand; Carrots may be preserved the same way.

*Cabbages* will continue to grow until hard frosts. Young plants for wintering are put in cold frames late this month or early next.

*Celery.*—That for winter use if not already handled, should be attended to; the soil is drawn towards the plants with the hoe; the leaves are held close together with one hand, while the loose soil is drawn around the plant with the other hand, and the job finished with the hoe. The object is to get the leaves in an erect compact clump, ready for storing. On the large scale

*Celery is Stored* in trenches a foot wide and as deep as the plants are tall. It is set in closely, and a little litter put over, which is increased as the cold increases. Small lots are best stored in a cool cellar in boxes nine inches wide, about as high as the celery, and of any convenient length. A few inches of earth are placed in the bottom, and the

plants packed in as close as they will stand. Wider boxes bring too great a mass of leaves together, and there is danger from rotting.

*Cold Frames* should be ready for cabbage, cauliflower, lettuce, and other plants wintered in them.

*Parsnips and Salsify* are both handy, and a portion may be left in the ground to be dug in spring; some think them improved by the winter's freezing. Put earth with those stored to keep them firm.

*Spinach.*—Keep the ground loose, and apply a covering of hay, etc., only when hard frosts come.

*Squashes.*—Cut if there is danger of frost, place in heaps and cover with vines. Handle carefully if you would have them keep well during the winter.

*Sweet Potatoes.*—Dig as soon as frosts touch the vines. Keep dry and where the temperature will not go below 60°.

*Manure.*—Make all that is possible, and save every fertilizing material that may be going to waste in the neighborhood; compost with muck or dry earth.

## Flower Garden and Lawn.

This month usually, at least in the northern states, brings two or three nights of frost in which all the most tender plants are killed, and then there will often be two or three weeks of charming weather in which those plants not cut down, bloom more profusely than ever. It will pay to provide

*Protection against Frosts*, and a very little thing will answer; newspapers, if they can be kept from blowing away, will do. We prolong the season of our Cannas several weeks by setting a pole in the center of the bed, and rigging an old sheet tent-fashion. The garden is often neglected as the end of the season approaches, but it should show

*Good Keeping* to the very end. Remove old flower stalks, cut back decaying herbaceous plants, and keep down late weeds. Neatness should compensate for any absence of display.

*Dahlias*, when the frost blackens the foliage, should be cut down; the roots may be left until cold weather approaches, when they may be dug, labeled, and stored wherever potatoes will keep.

*Bulbs.*—Procure the supply of spring flowering bulbs early. The catalogues of the dealers give full directions for treatment.

*Tender Bulbs*, such as Tiger Flower, Jacobean Lily, Gladiolus, etc., must be taken up before hard frosts, dried, labeled, and wrapped in paper; store in a cool place, where it is not too damp, and where they will not freeze, and away from mice.

*Cannas.*—If the frost touches the leaves, cut at once; the roots will not keep if the foliage is much frozen; store in a warm dry place.

*Peonies.*—Divide early this month if not done last.

## Greenhouse and Window Plants.

Everything about the greenhouse should be in readiness for sudden occupation. All repairs made, the heating apparatus in working order, and all places where insects can harbor, cleared out, coal or other fuel should be laid in, and pots and soil, as well as all other requisites, provided.

*The Cellar* is an important adjunct to the greenhouse, and especially so to the window garden, as there many plants may be kept in reserve, and if light, all the potting and other rough work with window plants, bulbs, etc., may be done there.

*Bulbs* should be potted as soon as received, and kept in a dark cellar to form roots.

*Plants for Forcing*, such as Bleeding Heart, Deutzia gracilis, Astilbe Japonica, and others are to be potted and put in the cellar or cold frame.

*Taking in Plants* that have been turned out for the summer, must be done before frost. It hardly pays to bother with old Geraniums and other quick growing things which usually get out of shape, but new plants for the window or greenhouse should have been provided last month from cuttings.

*Ventilate* freely, whether the plants are in greenhouse or window, that the transition to a close atmosphere may be gradual.

*Insects.*—Examine every plant before it is taken in, and if any insects are found, place the plant under hospital treatment until clean.

*Window Boxes and Hanging Baskets* should now be filled, and the plants well established before they are taken in-doors.

## Commercial Matters—Market Prices.

The following condensed, comprehensive tables, carefully prepared specially for the *American Agriculturist*, from our daily record during the year, show at a glance the transactions for the month ending Sept. 13th, 1875, and for the corresponding month last year:

1. TRANSACTIONS AT THE NEW YORK MARKETS.

| RECEIPTS. | *Flour.* | *Wheat.* | *Corn.* | *Rye.* | *Barley.* | *Oats.* |
|---|---|---|---|---|---|---|
| 28 d's *this* m'th | 314,000 | 4,913,500 | 3,918,000 | 29,000 | 41,000 | 1,061,000 |
| 27 d's *last* m'th | 361,000 | 4,115,000 | 1,984,000 | 24,000 | —— | 411,000 |
| SALES. | *Flour.* | *Wheat.* | *Corn.* | *Rye.* | *Barley.* | *Oats.* |
| 28 d's *this* m'th | 378,000 | 5,774,000 | 4,163,000 | 19,000 | 36,000 | 1,973,000 |
| 27 d's *last* m'th | 497,000 | 5,711,000 | 3,105,000 | 49,000 | 84,000 | 1,401,000 |

2. *Comparison with same period at this time last year.*

| RECEIPTS. | *Flour.* | *Wheat.* | *Corn.* | *Rye.* | *Barley.* | *Oats.* |
|---|---|---|---|---|---|---|
| 28 days 1875 | 314,000 | 4,913,500 | 3,918,000 | 29,000 | 41,000 | 1,061,000 |
| 29 days 1874 | 316,000 | 3,671,000 | 1,957,000 | 54,000 | 28,700 | 758,000 |
| SALES. | *Flour.* | *Wheat.* | *Corn.* | *Rye.* | *Barley.* | *Oats.* |
| 28 days 1875 | 378,000 | 5,774,000 | 4,163,000 | 19,000 | 36,000 | 1,973,000 |
| 29 days 1874 | 348,000 | 5,143,000 | 4,716,000 | 26,000 | —— | 2,304,000 |

3. *Stock of grain in store at New York.*

| | *Wheat.* bush. | *Corn.* bush. | *Rye.* bush. | *Barley.* bush. | *Oats.* bush. | *Malt.* bush. |
|---|---|---|---|---|---|---|
| Sept. 6, 1875 | 1,231,321 | 1,683,486 | 11,216 | 1,963 | 211,689 | 293,081 |
| Aug. 9, 1875 | 553,894 | 783,396 | 21,608 | 1,163 | 591,489 | 201,029 |
| May 11, 1875 | 969,804 | 1,542,924 | 16,124 | 16,587 | 543,209 | 229,855 |
| Jan. 11, 1875 | 3,675,122 | 1,019,900 | 50,889 | 191,470 | 877,014 | 145,617 |
| Nov. 9, 1874 | 3,680,141 | 1,727,510 | 19,123 | 117,185 | 791,722 | 135,582 |

4. *Exports from New York, Jan. 1 to Sep. 9.*

| | *Flour.* bbls. | *Wheat.* bush. | *Corn.* bush. | *Rye.* bush. | *Barley.* bush. | *Oats.* bush. | *Peas.* bush. |
|---|---|---|---|---|---|---|---|
| 1875 | 1,282,722 | 18,140,047 | 8,387,632 | 152,333 | 225 | 88,472 | 235,865 |
| 1874 | 1,529,415 | 24,462,895 | 15,829,600 | 533,050 | 3,320 | 86,896 | 272,105 |
| 1873 | 960,667 | 12,166,224 | 9,813,745 | 551,093 | 19,226 | 26,591 | 91,270 |

5. *Receipts at head of tide-water at Albany each season to Sep. 9th.*

| | *Flour.* bbls. | *Wheat.* bush. | *Corn.* bush. | *Rye.* bush. | *Barley.* bush. | *Oats.* bush. |
|---|---|---|---|---|---|---|
| 1875 | 54,800 | 11,262,200 | 3,698,700 | 83,500 | 32,900 | 1,155,600 |
| 1874 | 57,600 | 13,468,600 | 12,811,00 | 189,800 | 74,100 | 1,268,100 |
| 1873 | 61,600 | 9,183,100 | 10,071,100 | 671,100 | 27,000 | 2,233,700 |
| 1872 | 71,000 | 4,215,000 | 17,434,000 | 359,000 | 470,000 | 4,811,000 |

CURRENT WHOLESALE PRICES.

| | Aug. 12. | Sept. 13. |
|---|---|---|
| PRICE OF GOLD | 114 | 117 |
| FLOUR—Super to Extra State ₱ bbl | $5 40 @ 7 15 | $5 15 @ 6 50 |
| Super to Extra Southern | 5 35 @ 8 75 | 5 00 @ 8 50 |
| Extra Western | 6 10 @ 8 75 | 5 60 @ 8 25 |
| Extra Genesee | 6 50 @ 7 75 | 6 00 @ 7 25 |
| Superfine Western | 5 40 @ 6 00 | 5 15 @ 5 65 |
| RYE FLOUR | 5 10 @ 6 25 | 4 50 @ 5 75 |
| CORN-MEAL | @ — | 3 50 @ 4 50 |
| WHEAT—All kinds of White | 1 55 @ 1 70 | 1 35 @ 1 53 |
| All kinds of Red and Amber | 1 35 @ 1 60 | 1 25 @ 1 48 |
| CORN—Yellow | 84¼@ 85¼ | 75 @ 78 |
| Mixed | 75 @ 84½ | 65 @ 75 |
| White | 90 @ 92 | Nominal |
| OATS—Western | 61½@ 71½ | 40 @ 59 |
| State | 66 @ 72 | 49 @ 60 |
| RYE | 97½@ 1 10 | 90 @ 1 00 |
| BARLEY | 1 20 @ 1 25 | 1 15 @ 1 30 |
| HAY—Bale, ₱ 100 ℔s | 70 @ 1 12½ | 65 @ 1 10 |
| STRAW, ₱ 100 ℔s | 50 @ 90 | 50 @ 85 |
| COTTON—Middlings, ₱ ℔ | 14¾@ 14¾ | 14¾@ 14¾ |
| HOPS—Crop of 1875, ₱ ℔ | 18 @ 25 | 15 @ 22 |
| FEATHERS—Live Geese, ₱ ℔ | 35 @ 60 | 30 @ 60 |
| SEED—Clover, ₱ ℔ | 11½@ 11¾ | 13 @ 13¼ |
| Timothy, ₱ bushel | 2 70 @ 2 87½ | 3 00 @ 3 15 |
| FLAX, ₱ bushel | 1 85 @ 1 91 | 1 75 @ — |
| SUGAR—Refi'g & Grocery ₱ ℔ | 6¾@ 9¾ | 7 @ 9¼ |
| MOLASSES, Cuba, ₱ gal | 36 @ 45 | 32 @ 43 |
| New Orleans, ₱ gal | 70 @ 72 | 62 @ 68 |
| COFFEE—Rio (Gold) | 17½@ 20 | 17¾@ 20 |
| TOBACCO, Kentucky, &c., ₱ ℔ | 9 @ 24 | 8 @ 25 |
| Seed Leaf, ₱ ℔ | 6 @ 55 | 7 @ 45 |
| WOOL—Domestic Fleece, ₱ ℔ | 25 @ 68 | 25 @ 53 |
| Domestic, pulled, ₱ ℔ | 25 @ 50 | 25 @ 48 |
| California, clip | 15 @ 34 | 17 @ 32 |
| TALLOW, ₱ ℔ | 9 @ — | 9¾@ 9¾ |
| OIL-CAKE—₱ ton | 40 00 @45 00 | 41 00 @46 50 |
| PORK—Mess, ₱ barrel | 21 65 @21 75 | 21 25 @ — |
| Prime Mess, ₱ barrel | 19 25 @19 50 | 19 00 @19 50 |
| BEEF—Plain mess | 8 00 @ 9 50 | 8 00 @ 9 50 |
| LARD, in tres. & barrels, ₱ ℔ | 12¾@ 14¼ | 13¼@ 13¾ |
| BUTTER—State, ₱ ℔ | 16 @ 35 | 22 @ 35 |
| Western, ₱ ℔ | 14 @ 29 | 15 @ 33 |
| CHEESE | 3 @ 11¾ | 2 @ 10¾ |
| BEANS—₱ bushel | 1 50 @ 2 90 | 1 65 @ 3 00 |
| PEAS—Canada, free, ₱ bu | Nominal. | 1 20 @ 1 50 |
| EGGS—Fresh, ₱ dozen | 21½@ 25 | 18 @ 22 |
| POULTRY—Fowls | 13 @ 18 | 8 @ 17 |
| Turkeys—₱ ℔ | 14 @ 17 | 16 @ 20 |
| Geese, ₱ pair | 1 25 @ 2 25 | 1 25 @ 2 50 |
| Ducks, ₱ pair | 50 @ 83½ | 60 @ 95 |
| PIGEONS, ₱ doz | 1 75 @ 2 00 | 1 50 @ 2 3½ |
| WOODCOCK, per pair | 60 @ 75 | 80 @ 95 |
| SPRING CHICKENS, ₱ ℔ | 16 @ 20 | 14 @ 18 |
| TURNIPS ₱ bbl | 1 25 @ 1 50 | 75 @ 1 25 |
| CABBAGES—₱ 100 | 1 75 @ 5 00 | 1 75 @ 3 75 |
| ONIONS—₱ bbl | 2 25 @ 4 00 | 1 25 @ 1 75 |
| POTATOES—₱ bbl | 75 @ 2 25 | 75 @ 1 50 |
| SWEET POTATOES—₱ bbl | — @ — | 1 25 @ 3 50 |
| BROOM-CORN | 7 @ 13¾ | 7 @ 13 |
| PEARS, per crate | 75 @ 5 00 | 50 @ 4 00 |
| PEARS, ₱ bbl | — @ — | 2 75 @ 8 00 |
| PLUMS, ₱ bush | — @ — | 2 00 @ 4 50 |
| GRAPES, ₱ ℔ | — @ — | 2 @ 10 |
| APPLES—₱ barrel | 1 75 @ 3 50 | 1 00 @ 3 25 |
| CRANBERRIES—₱ box | — @ — | — @ — |
| PEACHES, per crate | 25 @ 2 00 | 25 @ 1 25 |
| GREEN CORN, per 100 | 50 @ 1 00 | 60 @ 1 00 |
| GREEN PEAS, ₱ bbl | 1 75 @ 3 00 | — @ — |
| TOMATOES, ₱ bush | 75 @ 1 75 | 20 @ 60 |
| STRING BEANS, per bag | 50 @ 1 50 | — @ — |
| CUCUMBERS, per bush. box | 50 @ 75 | — @ — |
| WATERMELONS, ₱ 100 | 7 00 @35 00 | 4 00 @35 00 |
| SQUASH, ₱ bbl | 50 @ 1 25 | 50 @ 1 25 |
| CAULIFLOWER, per bbl | 3 00 @ 5 50 | — @ — |
| MUSKMELONS, ₱ bbl | — @ — | 50 @ 2 00 |

Gold has been up to 117¾, and down to 112¾, closing Sept. 11th at 117, as against 114 on Aug. 12th. The movements in Domestic Produce have been quite liberal since our last, but prices have been generally ruling lower, under freer offerings of the leading kinds. The Breadstuff trade has been fairly active, the export demand having been good, but with more favorable harvest and crop reports, and more urgency on the part of receivers to realize, prices have declined materially. New crop winter Wheat has been arriving in very poor condition, and has been quite difficult to market. A few of the best samples have been taken for shipment. New crop Oats have also been coming forward in very poor order, much of the receipts having been unsound. Considerable purchases, on speculative account, have been made of prime new Mixed Chicago Oats, chiefly for October delivery, at 48c. per bushel. New crop Rye has been attracting very little attention, and has been much depressed in value. New crop Barley has been more sought after, mostly for forward delivery, closing quite firmly. Provisions have been unusually variable as to price, on free dealings, closing generally in favor of purchasers. Cotton has been quoted lower, under the very liberal arrivals of new crop at the shipping ports. At the reduced figures, the dealings have been comparatively large, chiefly for forward delivery. Wool has been more sought after toward the close, and has been quoted steadier. Tobacco has been fairly active within our range. Hay has been in less request, and quoted cheaper. Seeds have been quiet, and at the close easier in price. Hops much lower, and slow of sale. Ocean freights have been moderately active, but quoted lower. Flour by sail and steam to London, 2*s.* 3*d.* per bbl.; Grain by sail, to do., 7*d.* @ 7¼*d.* per bushel; Grain by steam to Liverpool, 6¼@6¾*d.*, and by sail, to do., 6¼@6¾*d.* per bushel. Grain tonnage for Cork and orders, 6*s.* 3*d.*; for Penarth Roads, and orders, 5*s.* 9*d.* @6*s.*; for the Continent, 6*s.* 3*d.* @ 6*s.* 6*d.* per quarter.

## New York Live-Stock Markets.

RECEIPTS.

| WEEK ENDING | *Beeves.* | *Cows.* | *Calves.* | *Sheep.* | *Swine.* | *Tot'l.* |
|---|---|---|---|---|---|---|
| Aug. 23 | 8,200 | 108 | 3,630 | 27,162 | 17,668 | 51,168 |
| Aug. 30 | 11,522 | 66 | 3,144 | 24,747 | 16,975 | 56,454 |
| Sept. 6 | 8,908 | 60 | 2,672 | 31,268 | 17,919 | 60,827 |
| Sept. 13 | 9,490 | 63 | 2,410 | 27,311 | 18,739 | 58,473 |
| *Total for 4 Weeks* | 38,120 | 297 | 11,256 | 105,518 | 71,301 | 226,922 |
| do. *for prev. 5 Weeks* | 46,083 | 504 | 16,080 | 126,110 | 111,334 | 310,701 |

| | *Beeves.* | *Cows.* | *Calves.* | *Sheep.* | *Swine.* |
|---|---|---|---|---|---|
| *Average per Week* | 9,630 | 74 | 2,821 | 26,379 | 17,825 |
| do. do. *last Month* | 9,216 | 100 | 3,336 | 27,222 | 22,265 |
| do. do. *prev's Month* | 8,453 | 95 | 3,360 | 21,639 | 25,847 |

**Beeves.**—Serious complaints have been made by shippers of stock via Albany, of the treatment of cattle in the change to and from the feeding pens in that city while on their way to New York. Owners of stock have charged that the treatment is "shameful and outrageous." The effect is seen to some extent in the fact that in one week of the past month, 6,808 head were sold at the yards in Jersey City, which are supplied by the Erie and other railroads, while but 2,000 were sold at the yards at 60th street, New York, supplied by the New York Central Road. Cruel and inhuman treatment of stock en-route to the market is unprofitable to all concerned, and in this fact lies the strongest protection for the unfortunate animals. The market for the past month has been unsteady. Opening strong, it gave way soon after to the extent of ¼c. per lb., and another ¼c. the following week. This last loss was recovered the same day with a firmer tone to the market. At the close the tendency was downwards for all grades except extra. The best qualities of cattle sold in small lots at 13¼c.@13½c. ₱ ℔. to dress 58 ℔s. per gross cwt.; the range for native steers was 8¾c.@13c. ₱ ℔ to dress 55 to 58 ℔s., and Texan and Cherokee cattle sold for 7½c.@9c. ₱ ℔ to dress 54 to 56 ℔s. These prices are fully ½c. ₱ ℔. above the rates of the same week last year.

The prices for the past four weeks were as follows:

| WEEK ENDING | *Range.* | *Large Sales.* | *Aver.* |
|---|---|---|---|
| Aug. 23 | 7½@13½c. | 11 @12 c. | 11¼c. |
| Aug. 30 | 7¼@13½c. | 10½@11¾c. | 11 c. |
| Sept. 6 | 7 @13½c. | 10½@11¾c. | 11 c. |
| Sept. 13 | 7½@13½c. | 10½@11¾c. | 11 c. |

**Milch Cows.**—The market has been dull throughout the month, and the hopes of dealers for a better feeling are not yet realized. The demand slowly takes up the meager offerings. Prices as we close are $50 to $70 per head with a dull market. **Calves** have been in dull but steady demand through the month, easing off somewhat last week. Fair to good veals sold at the close at 8¼c.@9c. ₱ ℔. live weight; poor veals brought 6½c. @7c. ₱ ℔. Grass calves sold for $6.75 to $8 ₱ head for good, and $5 50 to $6 for poor. **Sheep and Lambs.**—The market advanced ¼c. ₱ ℔. at the beginning of the month's business, with a brisk trade. The improvement has been maintained notwithstanding the increased receipts, and the market closes with an active demand for good sheep at 4¾c.@6¼c. ₱ ℔. live weight, and for lambs at 6¼c.@8¾c. ₱ ℔. Poor stock is not in favor, and is dull of sale. **Swine.**—The demand has been chiefly for dressed hogs. A few heavy State live hogs have been sold at 8¾c. ₱ ℔. weighing 250 to 300 ℔s. Nearly all the arrivals have been consigned direct to slaughterers. Dressed hogs have sold at 11c. ₱ ℔., but this price was not maintained, and the market for this stock fell back to 10c.@10¾c., which are the closing rates. A few live hogs were sold at 8¼c.@8¼c. ₱ ℔.

## See the Supplement with this Number.

The Publishers print an Extra Sheet, (making **32** pages in all, this month). In this they give their Premium announcements for the "Centennial Year," which year, by the way, *has already begun*, so far as subscriptions to this Journal are concerned. That is to say, all new subscribers now or hereafter received for 1876, are supplied with the remaining numbers issued this year after the reception of their subscription, *without extra charge*....All our readers will be interested in much that is said and pictured in the Supplement Sheet. No doubt many will, as hitherto, embrace the opportunity to supply themselves *without cost*, with some of the good articles offered. It is comparatively an easy matter to do, as many thousands have proved....As Editors, we promise to spare no effort to meet the wishes of the Publishers, to have the *American Agriculturist* for the Centennial Year exceedingly valuable to *all* its readers. We trust our readers will agree with us, that a Journal, like this, going into a family for a year, will not only exert a healthful influence in stimulating thought and improvement, and thus elevate the mind standard of all cultivators of the soil, and of others too; but that it will also help guard against errors, against imposition, and assist all to make their labor more profitable. With this view, we invite all to lend a kind influence in making this Journal even more widely known, and in drawing to it as readers, many who are now without its visits. This we ask as a friendly favor, aside from the rewards which the Publishers offer on a liberal scale to those who respond to their propositions. At least, we ask all to read what the Publishers propose on the first and second pages of the Supplement, and to the Descriptions of Premiums in the succeeding pages.

*containing a great variety of Items, inc'uding many good Hints and Suggestions which we throw into smaller type and condensed form, for want of room elsewhere.*

☞ **N.B.—The New Postage Law.**—On account of the new postal law, **which requires pre-payment of postage by the publishers, after January 1st, 1875,** each subscriber must remit, in addition to the regular rates, **ten cents for prepayment of postage by the Publishers, at New York, for the year 1875.** Every subscriber, whether coming singly, or in clubs at club rates, will be particular to send to this office postage as above, *with his subscription*. Subscribers in British America will continue to send postage as heretofore, for pre-payment here.

**Remitting Money: — Checks on New York City Banks or Bankers** are best for large sums: make payable to the order of **Orange Judd Company. Post-Office Money Orders** for $30 or less, are cheap and safe also. When these are not obtainable, **register** letters, affixing stamps for postage and registry: put in the money and seal the letter in the presence of the postmaster, and *take his receipt for it*. Money sent in the above three methods is safe against loss.

**The New Post-Office.**—The office of the *Agriculturist* has a remarkably central position. Uncle Sam thought he would get into a good neighborhood when he selected a site for a new post-office for the City of New York, as he put it diagonally opposite and within a stone's throw of our office. The building is the largest post-office in the country, and it is arranged in a most convenient manner. We are much obliged to the Uncle, as it makes the sending and receiving of our immense mails a comparatively easy matter. Strangers who visit New York should not fail to take a look through this spacious and magnificent structure, which, taking into account its architecture, its finely but not fantastically cut granite, etc., is one of the noblest buildings in this country, and is excelled by few other public edifices in the world.

☞ Subscribe **this month for all of 1876,** and get **November and December** Numbers FREE.

**The Useful House-Plans** published in every number, are giving great satisfaction; they bring many letters of thanks, and even in these "hard times" many houses, taking the country together, are being erected, some following the plans given, and others varying them more or less, to suit their individual tastes or circumstances. The specifications and estimates of cost given are of great value, as a *basis* for calculation, even where prices vary materially from those named. The quantities being given correctly by a skillful architect, like Mr. Reed, the difference in cost of the lumber, timber, etc., is easily learned by any one on inquiring in his own neighborhood. Everybody wants a house of some kind, and most expect at some not very distant day to have something different from their present habitation. The study of any plans helps educate one's taste, and furnishes useful hints, and any one intending to expend even $500 on a house will be likely to get hints worth ten times their cost by investing $5 or $10 in books on architecture. The readers of the *American Agriculturist* may expect continued plans and suggestions in most, if not all, future numbers of this Journal, which will alone be worth far more than the subscription cost of the paper.

**Hints to Advertisers.**—If the Publishers of this Journal were to offer to put one of your cards inside every copy of the paper sent out, you would jump at the chance, for though half or three-fourths of them would drop out and be lost, and only the first one opening a paper would be likely to see the enclosed card, you would reason that if only one in a hundred were preserved and examined, it would probably pay. Well, 1,000 cards with 2 by 2½ inches of decently printed surface, would cost at least $2.00. You would say if 1,000 would pay, 2,000 would, and so on up to 100,000, costing $200. But for $40 to $80, according to the place occupied, you can have such a card electrotyped into the pages of this paper, where it cannot fall out, where it will be constantly before *each* reader, and be ready for frequent and future reference, as most of these papers are before the readers for 3 or 4 weeks, and are then retained on file or bound, and probably not less than 500,000 persons read each number of the paper, as a majority of them go to several families. If you advertise by circular, each 1,000 will cost you from $1.50 upward for printing, $10 for postage, $1.50 to $2.00 for the cheapest envelopes, and $2 to $3 for addressing them, besides the cost of getting names and addresses, or at least $15 per 1,000, or $1,500 for 100,000! which would pay for several full columns of advertising. Further, the select character of the advertisements in this paper is a sort of guarantee to the reader that he will not be swindled, which is not possessed by loose circulars and cards that anybody may have put into papers on their journey to you. In respect to choice company, few other journals in the world are so careful to extract all unreliable men and things. The readers of the *American Agriculturist* know this fact, and they are more ready to patronize the advertisers in this paper. Its columns are, therefore, many more times valuable than ordinary mediums, aside from the great circulation here enjoyed.

**Adorn Your Homes.**—Read the advertisement on third cover page of this number, and tell your friends and neighbors how easily they can make their homes attractive.

**A new Enemy to the Raspberry.**—Mr. W. H. Coe, Florist, Lock Haven, Pa., sent us a specimen of raspberry cane upon which a Dodder (*Cuscuta compacta*) was perfectly established; Mr. Coe states that the patch where it was found is upon ground which was formerly a swamp. We have known this dodder to injure young apple trees in the nursery. Another species, figured in December last, attacks Lucern or Alfalfa in California. Being an annual, it is not difficult to get rid of; the affected stems should be cut out, and burned, to prevent the ripening of any seed.

**The American Pomological Society** closed its 15th biennial session at Chicago on Sept. 10th. The meeting was one of the largest and most interesting ever held by the Society; the western pomologists being out in full force, and the number of members from the eastern and other states unexpectedly large. For details of the proceedings, reference must be made to the published transactions. The meetings were presided over by Col. Wilder, who, though verging upon 80 years, fills the presidential chair with all the vigor of former years. The officers of previous years were for the most part re-elected, the principal ones being Marshall P. Wilder, President; Thomas P. James, Cambridge, Mass., Treasurer; and W. C. Flagg, Moro, Ill., Secretary. The next biennial session will be held at Baltimore, Md. The Society accepted the invitation of the Penna. Horticultural Society to meet at Philadelphia in Sept. of next year, as their guests; this is not to be a business meeting, but rather a social re-union in honor of the Centennial. A large and very fine exhibition of fruit was made by the members, but it was unfortunately placed in the building of the Chicago Inter-State Industrial Exposition, where the collections were so much scattered and in places so unfitted for the purpose that the fruit could not be seen to good advantage. The exhibition of seedling pears, by B. S. Fox, of California, and Clapp Brothers, Dorchester, Mass., and of new grapes, by J. H. Ricketts, Newburgh, N. Y., attracted special attention....Among the courtesies accepted by the Society, was a drive to South Park, offered by the Commissioners, and a banquet given by the Illinois Horticultural Society.

## Sundry Humbugs.

A correspondent suggests that a burning candle by which moths are attracted, with some of the insects singed and helpless, while others, regardless of the fate of their companions, still fly towards the danger, would make a good headpiece to our humbug column. He thinks that humbugs would not be successful were it not for the folly of the people, who run after them—a view of the case we have presented in former numbers. We gratify our friend by adopting his idea, and regret that there is one thing which can not be shown in an engraving. To make the picture truthful, we should represent the moths, after they had recovered from the effects of one singeing, at length regaining the use of their wings, and going as fast as before, directly to another and similar candle. Some persons are teachable, and do not need to run their heads against a stone wall more than once, to find out that they get the worst of it; such persons, if they have been foolish enough to be caught by some humbugging scheme, do not repeat the folly—one dose is a cure. Others are not so tractable, but go on investing in one thing after another, in the vain hope that luck will turn in their favor. Where such persistence in folly is accompanied by loss of money only, it is bad enough, but where

MONEY AND HEALTH

are both squandered, the case is deplorable. Some letters that come to us from these victims, are truly pathetic, and it is difficult to read them unmoved. Such letters are mostly from young men who, frightened by the circulars of the private disease quacks, have sent every dollar they could raise in the hope of a cure, to one and then another, until, having made themselves poor, and broken down in bodily health, and in a mental condition bordering on insanity, they write to us in despair to know what they shall do. They know that they are "going to a premature grave," and it is singular how generally they talk of going away from home, where the cause of their death may not be known to their families and friends. Such letters we have usually answered personally, but some remarks in a recent article have called out an unusual number, more than we can afford time to reply to by mail, and we briefly answer them here. Such young men need to do two things: (1) stop taking quack medicine, and (2) cure your mental disease. The second is perhaps the first step towards a bodily cure. We can see plainly by the tone of these letters, that each writer has brooded in secret over his trouble, whatever it may be, has fed his imagination by reading all the circulars of quacks, which are issued for the sole purpose of frightening such as he into paying high prices for their stuff, and have magnified every ache or slight disturbance, into a symptom of dreadful import. It is of the greatest importance that such a person should get out of this state of mind, and he can best do it by confiding his troubles to some one else. He must be badly off who has not some bright, hopeful friend who will cheer him in his despondency, and talk him out of the notion of dying just at present. Then find some good physician at home, and in this case we should prefer a young to an old one, and fol-

low his advice, which will in most cases be accompanied by very little medicine. But as you value your health, have nothing to do with any one who will undertake to treat your case from a distance, and without seeing his patient. But to return to some of

THE MOTHS WHICH GET BURNED.

One of them got so doubly singed a short time ago, that we briefly state the case. It hardly seems possible that there could be found at this late day, a person so foolish as to put himself into the hands of the saw dust swindlers, or dealers in counterfeit money. It seems that there are those vile enough to wish to buy the "queer," but the whole trick has been so often exposed that one would think that even these would be shrewd enough not to trust the other scoundrels, the sellers. Not so thought Henry Yerling, of Tipton Co., Ind. He had bitten at the offer to furnish him with $20,000 of counterfeit for $150 of good bills, so he came to New York, met the "shovers" by appointment at a hotel, paid his good money, and received a box supposed to contain the bad. The sharpers told him to hurry off for fear of the U. S. officers, and they accompanied him across the ferry to Jersey City, where they got into a quarrel, were all arrested, and taken to the police station. The box was there opened, and was found to contain, not sawdust this time, but *shavings*, whereupon Yerling was much enraged, and took out his revolver, but was prevented from shooting any one. As Yerling would make no charge against the other rascals, for fear of implicating himself, they were let off. Henry Yerling comes out of the scrape very badly singed; he lost his $150, and his traveling expenses, had the mortification of being arrested, and what is worst of all, has had his name published from end to end of the country, as wicked enough to deal in counterfeit money, and foolish enough to get swindled in the trade. This, and a similar case which occurred in Bedford Co., Pa., shows that the "shovers of the queer" are still at work, and that they can still find persons dishonest enough to accept their proposals; and though the subject is one to which we have often alluded, we refer to it again in the hope that the fear of exposure, if nothing else, will keep the wickedly foolish out of the hands of the sharpers. We haven't a particle of pity for those who get caught, and while we are glad they lose their money, we do not want another set of rascals to get it....A Correspondent in Virginia asks our opinion of

A "C. O. D.," ESTABLISHMENT

in Baltimore. He states that he recollects a concern in Chicago, which a few years ago operated in a similar manner, and which burst up, leaving many persons minus their money. So do we recollect it, and long before the end came, advised people to have nothing to do with it. It is very safe to beware of unusual methods of selling goods. Such houses as A. T. Stewart & Co., Lord & Taylor, and other immense houses, do not require any machinery of "numbered slips" or "coupons," in disposing of their wares. We are quite unable to see the need of this method of selling goods, which is the case with our correspondent, and we advise him, and all others, not to play any game they do not understand. Of the Chicago concern, our correspondent writes: "Several good people whom I know, have suffered in reputation ever since, by acting as agents for the swindlers. They went around among their friends and took orders for goods, and a certain amount of cash in advance, which of course was lost, and their friends and patrons are often heard to say that they do not think the money was ever sent off by the agent. These persons ought to know that in this state they should take out a license—costing $100—before they take orders from their friends in favor of the great C. O. D. House."

THE TEXAS MUTUAL BENEFIT ASSOCIATION,

Is acting very much like a swindling concern. It resorts to the old dodge of informing persons that they have not yet paid for their five tickets, (giving the numbers), and informing them that one of the tickets has drawn a valuable prize. The sum of $2 only is wanted, to pay for the tickets and secure the prize. This is a stale old trick, Mr. Secretary "Choate Somerby," which we stated some time ago looked very much like "Cheat Somebody," and this circular of yours shows that the play upon words was prophetic....The scheme of the "Montpelier Female Humane Association," of Va., is nothing more or less than a lottery. Our opinon in regard to raising money in this manner for any cause, however worthy, and backed by any names, however respectable, is too well known to make it necessary to repeat it. We make no distinctions in favor of any, when we denounce the whole system.

NO YOU DIDN'T, SIR!

"W. W." writes from Minnesota, that seeing the advertisement of a "Mercantile Prize Association," in various daily papers, and he "thinks in the *Agriculturist*," but does not "remember for certain," he invested in a ticket, and afterwards sent for another ticket, and writes complaining that he gets no return. To be sure the tickets were only 25 cents each, but we would not have "W. W." be in doubt whether he saw the advertisement in the *Agriculturist*, and can assure him that he did not. We do not publish that kind of advertisements.

A PERENNIAL HUMBUG,

is Joseph T. Inman. "Men come, men go, but Joe runs on forever"—almost. It will be 10 years next month since we first held up Joseph to the admiring gaze of the people. They who were boys then, are now men, and many who have read the first notice of Joseph, have gone beyond the reach of quack medicines, and yet Joseph turns up again every now and then, with the same old story. Now he comes, possibly to celebrate the 10th aniversary of our—well, not acquaintance, but first knowledge of him. Apparently out-living old "Sands of Life,"—here he is with his "Corassa Compound," which, whatever other qualities it may have, is at least long-lived. It has seen the rise and fall of many rivals; "Old Mother Noble" came and went; "Clark Johnson, M.D.," dawned upon us and faded into nothing; "Uncle Joe" arose with his "Bell-tongue syrup," and went down again, and "Aunt Lee," and all the rest of the long procession, have "gone where the woodbine twineth." Yet J. T. Inman, and his "Corassa Compound," are like Day and Martin's Blacking, "always on hand." As this Inman is a type of a class, let us see his way of doing business. He was a pastor. He went to Peru as a missionary; he was in a horrible state for a missionary to be in, and it would hardly be proper to repeat his catalogue of afflictions; a learned and venerable physician, Fernandez Colina—it is well to be particular as to names—put him up to the Corassa Compound, and of course Joseph I. immediately began to get well. There is no secret at all about the Corassa Compound. You see, it is made of *Corassa Apimis, Selarmo Umbelifera, Alkermes Latafolia*, and *Careadoe Herbalis*. Get them and mix them, and you will be all right. But there is one drawback, "the drug stores can not be relied upon to procure new remedies of pure quality," so Joe himself puts it up ready for use, "at the price which it costs me. My means make me independent, [lucky Joe!]. I seek no other reward for sending the remedy, than the satisfaction of doing good," at the rate of $3.50 per pound, by mail. Inman—this is what the boys call "too thin." It is not necessary to add that there are no such plants as this fellow pretends to put into his stuff, and all that show of names is bosh, and a very poor imitation of botanical names. The circular contains certificates from a London, a Parisian, and a New York "M. D.," but neither is dated, nor is there any date in the whole circular. But why should there be, this is one of the perennial humbugs, and the circular is just as fresh now as it was 10 years ago, and will answer its purpose 10 years to come—which is that of humbugging the unfortunate.

**October Fairs.**—There are several important fairs to come off this month—especially in some of the southern and western states. The Georgia State Fair on the 18th promises to be of special interest; the fair grounds of the society at Macon are regarded as the finest in the country. See list of other fairs on page 399.

**The New Jersey State Horticultural Society.**—New Jersey, a state so largely identified with horticultural pursuits, has heretofore had no Horticultural Society. In August last a meeting was called to consider the matter, which resulted in an unexpectedly large and very spirited assemblage at New Brunswick, at which an organization was perfected. The officers chosen were: *President*, George Thurber, of Bergen Co., Post-office address, 245 Broadway, N. Y.; *Vice-Presidents*, (one from each county represented), A. S. Fuller, Ridgewood, Bergen Co.; C. W. Badger, Newark, Essex Co.; John Van Doren, Manalapan, Monmouth Co.; John S. Collins, Moorestown, Burlington Co.; Edwin Allen, New Brunswick, Middlesex Co.; Geo. M. Cole, Deerfield, Cumberland Co.; N. W. Parcell, Elizabeth, Union Co.; Ezra Dayton, Bernardsville, Somerset Co. *Recording Secretary*, E. Williams, Montclair, Essex Co.; *Corresponding Secretary*, B. B. Hance, Red Bank, Monmouth Co.; *Treasurer*, W. H. Goldsmith, Newark, Essex Co.; *Executive Committee*, P. T. Quinn, Newark, Essex Co.; J. W. Hayes, Newark, Essex Co.; S. C. DeCou, Moorestown, Burlington Co.; Thos. Cole, Deerfield, Cumberland Co.; D. McLaury, New Brunswick, Middlesex Co.; President, Secretaries, and Treasurer. The next regular meeting will be held at New Brunswick, Jan. 20th, 1876, at which a large gathering is expected, and when the future operations of the Society will be decided upon.

**The New England Fair.**—The 12th annual exhibition of the New England Agricultural Society was held at Manchester, N. H., from the 7th to the 10th of September. It was a very successful exhibition, being mainly a farmers' fair with few of the "show" herds which are frequently seen at fairs. The entries of live-stock were numerous, and the pens were well filled. The working cattle made the most conspicuous show. These were generally very fine, the majority of them being estimated to weigh over 4,000 lbs. per yoke. One well trained team of eleven yoke belonging to Mr. J. E. Perry, attracted much notice. The Short-horn cattle made a good show; the Ayrshires, Jerseys, Devons, and Herefords, were only fair. The sheep and pigs were not such as might have been expected, neither was the poultry. A "bench show" of dogs was a new feature, and perhaps an admissible one at an agricultural fair, if we consider that the more dogs are cared for the less injury they may do to the farmers' flocks. The dogs, however, received more attention than the sheep, which is certainly reversing their order as to intrinsic value. Fruits, vegetables, and dairy products, were in small supply, but the trotting ring and some other attractive shows of questionable value in an agricultural fair, made up for all deficiencies in drawing a crowd and making the exhibition interesting to the visitors and financially successful to the Society.

**Much Rain.**—Some heavy rain-falls during the past wet season have been reported, but we have seen nothing to exceed that which fell in Wytheville, Va. A correspondent there states that on one day near the end of July, three inches of rain fell in three-quarters of an hour! Very good for Wytheville.

**The Buckeye Mower.**—At the great field trial of mowers by the National Agricultural Society of Switzerland, held at Zurich on the 27th of May, the first premium was awarded to the Buckeye. It has also received the past season a first premium at Birgfield, Germany; Uithoorn and Vintereen, Holland; the highest honors at Brummen and Oegstgeest, Holland; the first premium at the field trials at Hanover, New Hampshire; at Danvers, Mass., and at Thorn Hill, N. Y.

**Periodical for Dairymen.**—"J. H.," Hannibal, Mo. There is a large amount of practical information upon dairy matters in every number of the *American Agriculturist*. Dairying is made a subject of special interest as befits its importance as an agricultural industry, and we know of no other publication that would be better for a beginner than this. The price of the yearly bound volumes, which contain as much matter as several books, and are a library in themselves, is $2 each at this office, or if sent by mail, prepaid, $2.50 each. The yearly subscription is $1.60, postage paid; it can begin at any time, but those subscribing *this month*, for 1876, will receive gratis the remaining numbers for 1875.

**Importation of Percheron Horses.**—Mr. M. W. Dunham, of Wayne, Du Page Co., Ill., informs us of his return from France with 33 Percheron stallions and mares of the choicest blood of France. Many of these stallions were "approved" by the French Government and subsidized to the extent of 300 to 400 francs, ($75 to $100), per annum each, for the purpose of improving the horses of the country. Their weights vary from 1,400 to 2,000 lbs. We have before noted Mr. Dunham's enterprise in the introduction of Percheron horses, and are happy to record this his latest venture in this line. He informs us that he has now at his farm at Oak Lawn, (near Wayne, Ill.), 40 stallions fit for service, besides mares, yearlings, and colts, which are always ready for inspection by those who are interested in procuring this valuable stock.

**Sending us Fruit.**—Every season there are numerous parcels of fruit sent us, either for an opinion on some new variety, or sent for a name, or sometimes as a specimen of what the sender can raise. Of course we are willing to give any aid in our power to those who may ask it, but we must request those who send fruit to observe a few points. Please remember that you send the fruit for your own benefit and not for ours, and it is not proper to put us to any expense in the matter. If you do not think the sending will be worth to you the amount of the express charges, please do not forward it, as we seldom want it enough to pay express rates for it. As to sending by mail: no soft fruit should be sent in this manner; unless packed in a small wooden or tin box, any fruit will be badly bruised. The box-cover must be *tied*, not nailed on, and no paste, gum, or other adhesive material used. The parcel by mail must be so put up that by removing the string the contents can be inspected. Put no writing whatever in the box; if there are specimens of more than one kind, number them. A neglect to observe these particulars subjects the parcel to letter postage, which we have to pay or leave it. When fruit is sent by express or by mail, send a letter relating to it at once, or better the day before. We sometimes have several parcels of fruit waiting for us to know who sent them and what for; after they have decayed and have been thrown away, we get a letter saying, "A week or 10 days ago I sent you, etc." Last summer two parcels received by mail were kept in the ex-

pectation of hearing something about them; when they decayed and were thrown out, the letters relating to them were found at the bottom of the boxes, a place in which we did not think of looking for them, as it is so directly contrary to law that it did not occur to us that any one would do it. It is better to send fruit always by express. Not one parcel in five by mail comes in perfect order. Do not put fruit in cigar-boxes, or other boxes having an odor of their own, or use any odorous material for packing. We have often received grapes packed in kinds of saw-dust, which absolutely ruined them.

**Exports of Wheat and Flour.**—The gradual growth of our export trade in bread-stuffs is shown by the following figures, which give the value of exports of wheat and flour from 1830 up to last year:

EXPORTS OF WHEAT AND FLOUR FROM THE UNITED STATES.

| Yearly av'ge for 10 years | Flour. | Wheat. | Total. |
|---|---|---|---|
| ending 1830.... | $ 4,904,308 | $ 18,173 | $4,922,481 |
| 1840.... | 5,657,960 | 255,443 | 5,913,403 |
| 1850.... | 10,043,189 | 1,564,187 | 11,607,376 |
| 1860 ... | 18,014,366 | 7,502,868 | 25,517,234 |
| 1870.... | 22,571,364 | 29,593,869 | 52,165,233 |
| The year 1871.... | 24,093,184 | 45,143,424 | 69,236,608 |
| 1872.... | 17,955,684 | 39,915,060 | 56,870,744 |
| 1873.... | 19,381,664 | 51,452,254 | 70,833,918 |
| 1874.... | 29,258,094 | 101,421,459 | 130,679,553 |

The average business for 20 years ending 1840 was about $5,500,000 yearly; for the ten years ending 1860, the average increased to $25,500,000. The continued growth of the business up to the vast total for 1874 of over $130,000,000, or nearly twenty-four times that of less than 40 years ago, shows distinctly that the raising of grain for export has become a staple business which must grow in the future as it has in the past. If the growth during the next 40 years should even approach that of the past 40, some of us may yet live to see a *thousand millions of dollars* worth of wheat and flour exported to foreign countries. At any rate we need not be afraid of raising wheat or corn, nor of enlarging the borders of our agricultural domain. Fortunately there is room enough for it.

**A Fine Illustrated Catalogue.**—We have received from Messrs. Mallory, Wheeler & Co., of New Haven, Conn., manufacturers of locks, etc., a very elaborate catalogue, which is worthy of a special notice. It is a folio volume of nearly 300 pages, elegantly bound in substantial leather, and contains over 1,000 full size illustrations of locks and knobs of all sorts, and in fact everything pertaining to the securing of a door, from a bank door down to that of a closet. The illustrations are very finely executed in gold and silver bronze, to show the materials of which the locks are made, namely brass and iron or steel. Many of the larger door locks are very complicated in structure, some of them having as many as 600 changes, which will give some idea of their intricate construction. This catalogue, or more properly superb work of art, reflects great credit both upon the manufacturers and the engraver and printer, for the manner in which it is prepared, and the typographical beauty of its general arrangement.

**A Twin Dahlia.**—The Cascade Nursery Co., Richmond, Ind., send a specimen of a twin Dahlia, in which the flowers, of the variety, W. C. Bryant, are placed back to back upon the same stem. This phenomenon, which is quite common in the cucumber and some other plants, is called *fasciation*, and is due to the growing together of parts that are usually distinct; in this case the two Dahlia stems are more completely blended into one than is commonly seen.

**Roses very Much by Mail.**—Mr. E. Y. Teas, Pres. of Cascade Nursery Co., Richmond, Ind., where roses are a specialty, in a private note, mentions that in April last they sent roses by mail to Honolulu, Sandwich Islands, and that they arrived safely, and since have grown finely. This is a remarkable instance—and what a blessing to those who live at a great distance—to know that they can get plants in this manner. Mr. T. has carried the war (of roses) into Africa, having sent some to that country, and awaits the result. We hope for their safe arrival, and that, like some of the natives of that land, they may be "stealing and giving odor."

**Sowing Grass Seed in the Fall.**—"M.," Scotch Plains, N. J. There is no necessity to sow rye with grass seed in the fall, if the rye is not wanted. If the soil is made fine by repeated harrowing, and rich by fertilizing, the seed runs a better chance of taking well if the rye should not be sown. Leached ashes would make an excellent fertilizer for the grass, and nitrate of soda would be a valuable help. We would apply 50 bushels per acre of the ashes as soon as possible after the seed is sown, and would sow the seed without delay. The nitrate of soda should not be applied until spring, when 100 pounds per acre may be sown. If more is used and a dry season occurs, damage may occur. Nitrate of soda may be procured of Geo. E. White & Co., 160 Front st., N. Y.

**Malacatune.**—"G. C. W." This word is spelled in a variety of ways, all of which are corruptions of *Melocoton*, one of the Spanish names for peach, (*Durazus* being the other). It is written, besides the manner you mention, Melacatune, Malocoton, and Malagatune. It is a handsome large yellow peach with a deep red cheek, and is the parent of Crawford's Early and Crawford's Late. The peaches in the market about Aug. 20th, as "Malacatunes," were no doubt Crawford's Early. The dealers are not very particular about names, and are apt to call any high colored, yellow-fleshed variety a "Malagatune," as that is a popular market name.

**Hollow Celery.**—"W. F.," of Southbridge, Mass., inquires why his celery grows hollow or pipey, and as Mr. Peter Henderson knows more about celery than most people, the question was referred to him. He says: "It is in all probability in consequence of having got some tall-growing poor variety. We have never seen the dwarf varieties become hollow. The quality of the soil has something to do with it. On one occasion we planted the 'Giant Solid' celery on three different soils, stiff clay, sandy loam, and muck; on the first it was entirely solid, on the second partially hollow, while on the muck it was so pipey as almost to be useless, and yet all was from the same bag of seed sown and planted at the same time. Angle worms can best be destroyed by incorporating lime well with the soil."

**Tuberoses in Winter.**—"I. S.," Oil City, Pa., asks what time during the winter Tuberoses, that were planted from sets in June and potted now, will flower if kept in a night temperature of 60° or 65°. Peter Henderson replies: "In our experience we find that Tuberoses so treated will not flower much before April. If the temperature at night in winter could be increased to 75°, they might then bloom in February, but not before. One of our New York florists, with a view to overcome the difficulty that all have experienced in getting these flowers at the holidays, has had a large number grown in the extreme southern states, thereby getting the new crop of bulbs ripened sufficiently to plant in September. By this method it is expected that flowers can be had in December and January. The experiment has not been completed, but will be the coming winter, and if successful, the system will be detailed at length."

**Killed by a Piece of Wire.**—The death of a noted and valuable cow of the herd recently sold by Col. L. G. Morris, to Messrs. Avery & Murphy, of Michigan, occurred a short time ago. The cause of death was a piece of wire, six inches long, such as is used to bale hay, penetrating the heart. She was the Twelfth Maid of Oxford, a highly bred Short-Horn. The wire must have been swallowed with the food, and have penetrated the coats of the stomach, passed into the chest and into the substance of the heart. Such accidents are by no means rare, and they prove very clearly the easy possibility of the penetration of parasitic animals to any part of the body, the lungs, heart, liver, brain, or muscles; if they once gain access to the stomach along with the food.

**Roofing Felt for Stacks.**—"W. B.," Marion Co., Ohio. Roofing felt would not be strong enough to use as a cover for hay-stacks. It would be far the cheapest to provide roofs such as are described on page 331, than to use any kind of cloth or felt covering, as these would last for 20 years or more, while waterproof sheets would be worn out in four or five years, and cost nearly as much as the sheds. For temporary coverings a sail or tent cloth may be used to turn the rain until the stack can be secured permanently.

**Wire for Mending Harness.**—"W. L. W.," Pittsburg. The wire used for mending harness, as described heretofore in the *Agriculturist*, is No. 16 copper wire. It can be purchased at any hardware store for about 20 cents per 100 feet.

**Is Hungarian Grass Hurtful?**—"J. C. B.," Tarrant Co., Texas. When Hungarian grass is allowed to ripen before it is cut, it sometimes causes irritation to the kidneys of horses, to which the hay is fed. The seed is surrounded by small stiff barbed bristles, and these have been known to form a kind of felted ball in the stomach and intestines, and death is said to have been caused by them. The crop should be cut when in blossom if it is to be made into hay and used for feeding horses, though in many cases no ill effects are experienced from its use when cut at maturity.

**Seeding with Orchard Grass.**—"E. N. C.," Beloit, Wis. One bushel of orchard grass is not enough seed for an acre of ground. Two bushels at least should be used. Perhaps as good a way as any would be to wait until spring and sow 4 quarts of clover with half a bushel more orchard grass, harrowing the surface lightly before sowing the seed.

**To Remove or Prevent Rust.**—"E. T. P.," Suffolk Co., N. Y. Rust may be removed from tools or steel or iron implements, by rubbing with a mixture of emery powder and sweet oil, and a woolen cloth. To prevent rusting, the tools should be heated until the hand can not bear to touch them, and then rubbed with white wax or paraffine. They are then exposed to the heat again until the wax is all absorbed, and finally rubbed with a piece of flannel. Iron implements, as plows, are preserved from rust by covering them with a coat of thick lime wash.

**To Prevent a Horse from Rolling in the Stall.**—"J. F. S.," New Canaan, Conn., advises that a strap or rope be fastened to the roof or ceiling of the stall where the horse's head will be when he lies down, and reaching only to within two feet of the ground. A snap should be attached to the end of the rope, which is to be fastened into the ring of the halter. When the horse lies down, he can not bring his head to the floor, and consequently can not roll over. This plan has cured a horse which was addicted to this habit.

**Basket Items continued on page 397.**

## The Ruffed Grouse—Grouse, Partridge, or Pheasant.

The engraving upon the first page represents a scene of which the reality may be witnessed in many parts of the country, during the present month; the bird itself will be at once recognized, and at the head of this article are given the names by which it is known in different parts of the country. Its scientific name is *Bonasa umbellus*, and ornithologists have fixed upon Ruffed Grouse as the correct common name, claiming that it is not a Partridge, as it is usually called in New England and the middle states, nor do they regard the term Pheasant, given it in the southern states, as any more appropriate. The bird has a wide range, and in some of its varieties is found quite across to the Pacific, and from Maine to Mexico. It is not a migratory bird, but winters in the northern states in thickets, and is said to have the peculiar habit of burying itself in deep snow to pass the cold nights; if a rain comes on followed by freezing, great numbers perish in their icy covering. They feed upon various kinds of berries, and other wild fruits, seeds, and insects, and in a time of great scarcity, eat the buds of trees, mosses, the leaves of various evergreens, including those of the common Laurel, (*Kalmia*); the laurel-leaves are generally thought to communicate a poisonous quality to the flesh of the birds which eat them; but Mr. C. H. Hinkle, who engraved the picture, and is an authority in sporting matters, informs us that he has eaten birds the crops of which were full of laurel-leaves, without any inconvenience, and is of opinion that the alleged poisoning cases were due to leaving the birds undrawn for too long a time. The bird, in May, makes a very simple nest of dried leaves, at the foot of a tree, or near some old logs, where 10 to 12 eggs of a dull-brown color are laid. The grouse are a favorite game with sportsmen, but the novice finds it a difficult bird to shoot; it rises with a great whirr, and unless one has his nerves under control, his hurried shot is quite as likely to miss as to hit. The true sportsman will only shoot the bird while on the wing, but the "pot-hunters," as those who hunt for market are called, are in search of birds, and not of sport, and care little by what means they get them. Sometimes curs are trained to tree the birds, when they are shot down in a most unsportsman-like manner; their number is also greatly reduced by trapping and snaring, and they are by these destructive methods quite exterminated, or driven away from localities where they were formerly found very abundant.

## In Favor of Rifle Clubs.

We are pleased with the general interest now manifested in rifle shooting, and for several reasons. First, on public considerations. Our Country has always depended upon its citizens for defense. Our Independence was achieved by the militia men, whose sure aim was too much for the disciplined, but poor shooting armies of a powerful kingdom. In Europe immense standing armies are maintained at an expense that crushes the people. Here are a few figures showing what it costs to sustain their armaments in *time of peace*, and how vast a number of men are withdrawn from productive labor. The first column includes the regularly enrolled soldiers, though a considerable number of these are partly engaged in other occupations in time of peace:

| | *Men Enrolled.* | *Annual Cost (gold), in Time of Peace.* |
|---|---|---|
| France | 1,700,000 | $133,000,000 |
| Germany | 1,700,000 | 100,000,000 |
| Russia | 1,350,000 | 136,000,000 |
| Italy | 760,000 | 49,200,000 |
| Great Britain | 583,000 | 124,200,000 |
| Austria | 535,000 | 54,000,000 |
| Turkey | 300,000 | 28,000,000 |
| Spain | 270,000 | 32,000,000 |
| Switzerland | 180,000 | 1,800,000 |
| Sweden | 160,000 | 5,600,000 |
| Holland | 100,000 | 5,600,000 |
| Portugal | 78,000 | 1,700,000 |
| Denmark | 54,000 | 1,850,000 |
| Greece | 51,000 | 1,800,000 |
| Belgium | 49,000 | 8,256,000 |
| Total | 8,011,000 | $682,126,000 |

In this country we average about 25,000 men in the regular army, and half of these could be readily dispensed with, were it not for our peculiar situation in reference to the Aboriginees, who must be guarded, as well as guarded against, 10,000 Regulars would suffice to picket the fortifications and protect them from decay, and supply a small national police. We have no occasion for an offensive war, and need have little fear of a defensive one. We can well depend upon our citizens in case of an unjust war forced upon us. From the battles of Concord, Lexington, and Bunker Hill, to now, the citizens trained to use the rifle skillfully against wild animals, have been powerful adversaries in battle. Many illustrations of this were seen in the late domestic conflict. The western and southern men were a match, one to three, against those from the older eastern states, where the rifle had nearly gone into disuse. We have seen some of these contests, and from the nature of the case, we would prefer to go into battle with 2,000 men who could each pick off his enemy at a fourth to half a mile, than to be one of 10,000 such shooters as formed the bulk of recruits from the eastern half of the United States in 1861-65.

With occasional practice in a local rifle club, a large majority of the members acquire skill, steadiness, and confidence, so that at a distance of 300 yards or 1/6 of a mile, they can strike a foot target off-hand with every second shot at least, and a 30 to 40-inch target at half a mile or more. Now suppose that in 20,000 of our towns we have 25 such marksmen among the young and middle-aged men. This would supply a powerful, effective reserve of half a million, equal for defense to two or three millions of such men as have usually made up the standing armies of Europe. With such a force, with educated officers to train and direct them if occasion required, no other nation would be likely to molest us under any slight provocation. As every regiment of regulars costs us about $1,000,000 a year, our General Government could well afford to cut its army down still more, and appropriate four or five millions, if need be, to encouraging the formation of rifle clubs, supplying them weapons for practice, and instructors, when needed. So much for a national view of the subject.

This is the day of athletic and other field sports, ball-playing, boating, etc., and, we are sorry to say, of horse-racing. Most young men would take more pleasure in sending a rifle-ball straight to the distant "bull's eye" than in any other amusement. The walk to the rifle range, and the individual participation in the shooting, would furnish better and higher toned exercise than going to the race-course. Rifle-shooting can be participated in by a much larger number than can indulge in boating. The latter exercise, as well as ball-playing, is frequently of a violent character, while in the ball-field the chief participants are a few "picked nines." In the well-organized rifle-clubs there is really less danger to limb, and to life even, than in the ball-field, as it is now conducted with the lead-like "regulation balls and bats." There is not a little thought and science cultivated in the use of the target rifles, as now made, including the calculations for distances, variation by winds, state of the atmosphere, etc. We suspect the students at colleges would *as a whole* get more and better exercise and amusement, and suffer less in morals, if rifle-clubs should take the place of the rowing-club, and of "college nines" of the ball-field. [For some notes on target rifles, see Supplement to this paper].

## A Farm House Costing $2,800.

BY S. B REED, ARCHITECT, CORONA, LONG ISLAND, N. Y.

These plans were designed for a convenient and comfortable Farm-house in the American style, comprehending the most economical and practical methods of construction. The size, and shape of such houses should be made to conform to the requirements of those who are to occupy them. Unlike the villager, the farmer has ample road front, and his house should be so arranged as to secure the most pleasant outlook from the living rooms.

Fig. 1.—FRONT ELEVATION OF FARM HOUSE.

**Exterior,** (figure 1.)—Farm-houses usually stand disconnected and apart from other buildings, and should have outlines that will best adapt them to the conditions that are otherwise manifest in the location. This plan is intended for an eastern frontage, where it would face the morning sun, when the principal and broader portions of the building, at the right, would be doubly valuable as a shield to ward off the northern winds from the parts of the house most used by the occupants. (By reversing the plan it would be equally adapted to the opposite, or easterly side of a road.) It is intended that the body of the house shall be set at least two feet above the ground, this gives opportunity for good sized cellar windows, that will admit light, and afford good openings for cellar ventilation, and also secure the framework of the building against moisture from the ground. Such moisture, if allowed, will cause decay of the sills, and other principal timbers, and is sure to percolate upward into the house, filling it with unwholesome vapors. The variety of the general outlines as shown in the Elevation are calculated to impart a cheerful and lively appearance always desirable in a country home, and very pleasant to the passer-by. The ridged roofs, with their spreading gables, and ample projections, are features of frankness in which there is no attempt at concealment or imitation. The Bay-Windows, wide Entrance, and spacious Piazza, are each expressive of liberality and refinement. The extreme simplicity of the details, and methods of construction, devoid of all ostentatious display, clearly express the purpose of the building, and commend it to the consideration of all who are interested in rural house building....

**Foundation,** (fig. 2.)—In most locations stone are abundant, our estimate comprehends the building of the foundation walls of rough broken stone laid in coarse mortar, and neatly pointed where exposed to sight. Any man who is at all familiar with the most ordinary stone-work, such as building "wall" fences, could build these foundations acceptibly; they should be laid up 18 inches thick, and flush with the outside of the frame-work of the building. Our plan shows a cellar under the central part of the building only, which should be 7 feet deep; this cellar will be found sufficiently large for the uses of most families, but may be enlarged if desirable. [One of the "wise sayings" we heard in youth, was, "always build your cellar under the whole house." Unless there are ample cellars under the barns, the house-cellar is never too large. In this case, it will be but little extra cost and labor, to carry the foundations down, and take out the earth. The walls provided would do most of this, and then we have ample cellars for all wants, and have room to partition off fruit and vegetable rooms, the former of which need to be much cooler than the latter, if one would keep fruit well.—ED.] The side walls of the *Area* are built of the same materials as the cellar walls, with the stone steps inserted while building. The foundations shown on the plan where no cellar is required, are built of the same materials, laid in trenches, which have been excavated 18 inches wide, and 2 feet deep. The chimney foundations should be started, and laid up with the other walls. A very effectual ventilation may be provided from the cellar by arranging an opening that shall lead to the left-hand flue of the kitchen chimney; this flue will be warmed by contact with the range when in use, and a strong draft will be made, which will exhaust the damp foul odors so common in deep cellars. It will be observed that the cellar is protected from the extreme changes of outward temperature by the walls and spaces at each side, and

by the partial coverings in front and rear.... **First Story,** (fig. 3.)—This story is divided into 3 large and 3 small rooms, and hall. By this plan the Kitchen is intended as the Living-room of

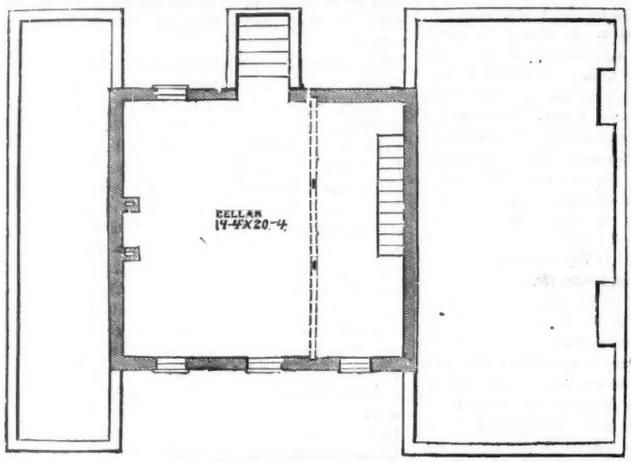


Fig. 2.—PLAN OF CELLAR.

the family, and is so arranged as to be the most *convenient and pleasant room in the house*—has large windows front and rear, which will admit an abundance of light, and afford an outlook each way. A large Range is placed in the fire-place, with a water-back connecting with the boiler in the laundry. The clock and lamp-shelf is placed on the opposite side of the room from the fire-place; *should never be over it.* Adjoining the kitchen, and connected with it, is a Pantry, containing shelving, drawers, and a wash-tray, with cold and hot water. The Laundry, or *work room*, is arranged to connect directly with the kitchen and pantry, and leads to the rear outside door. This room is fitted up so that the principal kitchen work may be done in it, with great facility, and with few steps, and contains a closet, sink, pump, wash-tubs, tank, and boiler. The hight of the ceiling in this room is 10 feet in the clear. The Tank, (not shown in the drawings,) is situated close up to the ceiling, above the pantry door, is 8 feet long, 3 feet wide, and 2 feet deep. The Boiler is of copper, 40-gallon capacity, and is placed directly in the rear of the kitchen chimney. The Sink, and wash-tubs, are shown on the plan, and are to be provided with cold and hot water. The force-pump is placed next to the sink, under the tank—by this method but little plumbing is required, and a very perfect and satisfactory arrangement is secured. The boiler keeps the temperature of this room sufficiently

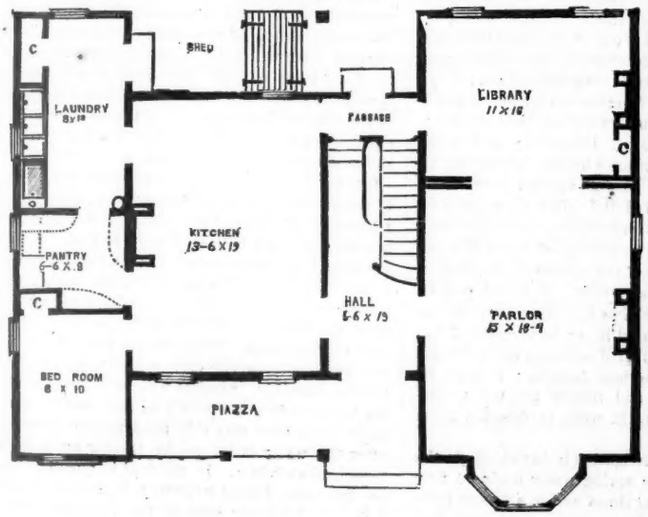


Fig. 3.—PLAN OF FIRST STORY.

warm to prevent damage to the pipes from frost. The Bed-room also adjoins the kitchen, and has a closet for clothing, and two windows. The principal Hall included in the central building, is entered through large double doors from the front piazza, and connects through doors with the parlor, kitchen, and back passage, and contains the principal stairs, which are of easy "platform" construction. The Parlor has a large bay-window, marble mantel, and adjoins the library through large sliding doors. The Library has a marble mantel, and closet, and connects with the back passage at the rear of the principal stairs. The front piazza has its ends sheltered by the projections at each end, and is arranged to require but two columns. If desirable at any time, a part of this piazza can be enclosed with sash at very little expense, which would provide a very convenient conservatory for plants and flowers. The rear "shed" is provided with a roof, and columns, but has no wooden floor. It is intended that the grounds around the rear of the central building shall be graded well up, say within a foot of the rear door sills, so as to require but a single step, or large flat stone, to each door. The outside cellar doors would be made to lay even with the final grade, and hung to the coping stones of the area walls, and the remaining space paved or flagged with stone. When once properly done, the finish of this character will last a lifetime without trouble, while woodwork could never be satisfactory, and would often require renewal. Whenever the cellar doors are opened, they are hooked up against the columns, where they form a railing, or guard, to prevent the usual danger of an open hatchway.... The **Second Story,** (fig. 4,) has a hall, 4 large, and 3 small chambers, with 4 closets, and stairway leading to the attic. Each of the large chambers has two windows, and a ventilating register in the flue of the chimney adjoining. All these rooms have full hight ceilings, and are not so close to the roof as to be affected by their absorbed heat of summer, but have complete square ceilings, with large air spaces between them and the roofs. The *Attic* of the principal building is completely floored, and has windows in each gable or pediment, and may be used for storage, drying clothes in stormy weather, and for many other purposes.... **Construction.**—The estimate appended indicates the kind and quantity of materials used, which will be found to be such as are now most generally adopted for buildings of this character. The work is very simple, and may be executed by the simplest methods. Information concerning the application and uses of the "felting" may be found on page 89 (March *American Agriculturist*), and other information concerning buildings of a similar character, in the succeeding numbers. In the May No., page 173, we suggested that "there are circumstances that would justify the building of one part of a house first." Should it be desirable, the central portion of this house could be built first, and would be found quite sufficient as the dwelling of a small family.... **Estimate.**—The following estimate has been carefully compiled, and may be relied on for quantities, etc. Prices are somewhat lower now, but the figures here given form a good basis of calculation:

| | |
|---|---|
| 65 yards Excavation, @ 25c. per yard | $16.25 |
| 882 feet Foundation, @ 15c. per foot | 132.30 |
| 725 " " @ 10c. per foot | 72.50 |
| 6,000 brick in Chimneys, @ $15 ₱ 1000 | 90.00 |
| 40 feet Stone Steps and Coping, @ 30 c. per foot | 12.00 |
| 900 yards Lath and Plastering, @ 35c. per yard | 315.00 |
| 4,790 feet Timber, @ 2¼c. per foot | 107.97 |
| viz. Sills, 4x8 in. x218 ft. long. 45 Beams, 3x8 in. x 6 ft. l'g. | |
| 1 Girt, 4x8 in. x20 ft. long. 22 " 3x8 in. x22 ft. l'g. | |
| 7 Posts, 4x7 in. x22 ft. long. 15 " 3x7 in. x 9 ft. l'g. | |
| 2 Posts, 4x7 in. x18 ft. long. 4 Valleys, 3x8 in. x20 ft. l'g. | |
| Ties and Plates, 4x6 in., 384 ft. long. | |
| 500 Wall Strips, 2x4 inches x13 feet long, @ 16c. each | 80.00 |
| 840 Novelty Siding Boards, 9½ in. wide, @ 38c. each | 120.20 |
| 150 lbs. Tarred Felting, @ 5c. ₱ lb. | 7.50 |
| 300 Matched Flooring Boards, 9½ in. wide, @ 35c. each | 105.00 |
| 20 Rough Spruce Plank, @ 25c. each | 5.00 |
| 270 Shingling Lath, @ 6c. each | 16.20 |
| 48 bunches Shingles, @ $2 each | 96.00 |
| 75 Hemlock Boards, 10-inch, @ 20c. each | 15.00 |
| 7 Squares of Tin, @ $9 per square | 63.00 |
| Materials in Cornices and Outside Casings | 60.00 |
| 33 Narrow Pine Flooring for front Piazza, @ 25c. each | 8.25 |
| 67 Narrow Pine Ceiling, @ 25c. each | 16.75 |
| 1 Bay Window complete | 75.00 |
| 26 plain Windows complete, @ $12 each | 312.00 |
| 4 Cellar Windows, complete, @ $6 each | 24.00 |
| 30 Doors, complete, @ $10 each | 300.00 |
| Stairs, comp'e, $70.00; 8 Closets (fitted comp'e) $40,00 | 111.00 |
| 2 Marble and 2 Pine Mantels | 50.00 |
| Nails, $30.00; Range with Elevated Oven, $80.00 | 100.00 |
| Plumbing, $84.00; Cartage, average one mile, $27.08 | 111.08 |
| Carpenter's Labor, not included above | 250.00 |
| Painting | 120.00 |
| Total cost, complete | $2,800.00 |

## Science Applied to Farming.—X.

BY PROF. W. O. ATWATER, WESLEYAN UNIVERSITY, *Middletown, Conn.*

### Waste and Saving with Potatoes and Roots.—More Feeding Experiments.

A Correspondent, referring to the experiments

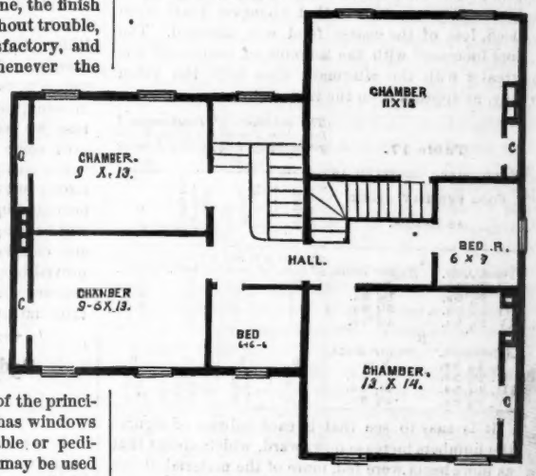


Fig. 4.—PLAN OF SECOND STORY.

described last month, asks, "Are we to conclude that potatoes are unprofitable as food for stock?" By no means, if they are rightly fed. It is a matter of common experience that stock are healthier, and cows give more milk with potatoes or roots and hay, than with dry hay alone. But, at the same time, there is apt to be a real loss of hay, unless some nitrogenous food, like oil-cake, malt-sprouts, beans, peas, or bran, are mixed with the potatoes or roots. There is loss of hay because *less of it is digested and utilized as food.* The rest, that would be digested in right feeding, is passed off as excrement, and is useful only for manure.

The case is simply this: If the mixed food contains too little nitrogen (albuminoids), and too much starch, sugar, or other carbo-hydrates, the animals cannot digest it completely. Only the best qualities of hay furnish as much nitrogen as is *needed* by working cattle or milch cows. Potatoes contain very little nitrogen, and a great deal of starch. So sugar-beets are poor in albuminoids, and rich in sugar, and sugar, like starch, is entirely a carbo-hydrate. Mix considerable of these with hay, straw, corn-stalks, or even clover, and the ration will still lack nitrogen, and there will be loss of valuable food material. But if nitrogenous food be added, at the

same time, so that the whole ration may contain the proper proportions of albuminoids *and* carbo-hydrates, the animals will digest all its digestible material, and there will be no loss. This matter is so important that I will illustrate it by some

**More Feeding Experiments.**

Some years ago, a German chemist, Grouven, fed oxen for a time upon straw, giving them what he styled a "hunger-ration," though in fact it might almost be called a starvation-ration, for there was just enough of the straw to keep the animals from starving. He then added, in successive trials, quite small quantities of sugar, starch, and other non-nitrogenous materials, determining in each case just how much was digested. And though with starch or sugar and straw together, the oxen had little more than enough to sustain life, yet they digested less from the straw, than when nothing was added to it.

It is a very interesting fact, that of the different kinds of coarse foods,—as clover, hay, straw, cornstalks,—those which are richest in nitrogen, suffer the least loss when mixed with non-nitrogenous foods. This principle is very plainly set forth in some experiments by Wolff. Four sheep (two-year-old wethers) of 100 to 105 lbs. weight each, were used. As coarse food they received aftermath, ("rowen"), and Vetch hay, and as concentrated food, sugar-beets. The vetch, it may be said, is a leguminous plant, like the bean, or clover. The stalk, or hay, is rich in nitrogen, and is highly valued in Europe as food for cattle. The sheep were fed for a period with aftermath hay, or vetch hay alone. Then, during a second period, a small amount of sugar-beets was added. During a third, a larger amount of beets was given, and during a fourth, still more, while during a fifth period the beets were omitted, and the hay fed alone once more. The result was that whenever beets were used, less of the coarse food was digested. The loss increased with the amount of beets, and was greater with the aftermath than with the vetch hay, as appears from the table below:

**Table 17.**

EACH SHEEP RECEIVED AS FOOD PER DAY ABOUT AS BELOW.

| | | *The addition of Beets caused loss (less digestion) in each ingredient of hay, as in figures below.* | | | |
|---|---|---|---|---|---|
| | | *Albuminoids.* | *Crude fiber.* | *Other Carbo-hydrates* | *Fats.* |
| A | | *p'rcent of loss.* | *p'rcent of loss.* | *p'rcent of loss.* | *p'rcent of loss.* |
| *Vetch Hay.* | *Sugar Beets.* | | | | |
| I. 2¼ lbs. | None. | 0 | 0 | 0 | 0 |
| II. 2¼ lbs. | 1½ lbs. | 1.2 | 6.3 | 0 | 2.2 |
| III. 2¼ lbs. | 3¼ lbs. | 2.5 | 6.3 | 1.4 | 6.6 |
| IV. 2¼ lbs. | 4¾ lbs. | 6.8 | 8.5 | 0 | 12.4 |
| B | | | | | |
| *Aftermath.* | *Sugar Beets.* | | | | |
| I. 2¼ lbs. | None. | 0 | 0 | 0 | 0 |
| II. 2¼ lbs. | 1½ lbs. | 2.4 | 1.3 | 2.3 | 1.9 |
| III. 2¼ lbs. | 3¼ lbs. | 6.7 | 6.0 | 3.6 | 1.3 |
| IV. 2¼ lbs. | 4¾ lbs. | 14.4 | 7.3 | 7.9 | 12.8 |

It is easy to see that in each column of figures the numbers increase downward, which shows that as more beets were fed, more of the material of the hay passed off undigested, and was lost as food.

It will be well worth our while to study these figures closely. In trial B, IV, for instance, in the column of albuminoids, opposite the 4¾ lbs. beets, is the number 14.4. This means that of every 100 parts of albuminoids in the 2¼ lbs. of hay, 14.4 parts less were digested, with the 4¾ lbs. of beets, than when the hay was fed by itself. From the detail figures, (not given above), in the description of the experiments, it appears that the aftermath hay contained 14.26 per cent of albuminoids, that is, 100 lbs. of hay contained 14¼ lbs. In the experiments with hay alone, the sheep digested on an average 64 per cent of this 14¼ lbs. With the 4¾ lbs. of beets, they digested only 49.6 per cent, (64—49.6=14.4), so, 14.4 per cent of the albuminoids of the hay was lost. To put it in another way; of every 100 lbs. of albuminoids contained in the hay, the sheep could digest and use 64 lbs., but with the beets they digested only 49⅗ lbs. In short, from 64 lbs. of digestible albuminoids in the hay, 14⅖ lbs., or between ¼ and ⅕ was lost by adding the beets.

It should be remembered, that by loss here, is to be understood loss as food, and not as manure. So far as the carbo-hydrates, fiber, and fat are concerned, the waste is practically total, as these contain no nitrogen, and have very little fertilizing value.

**What is to be Done with Potatoes and Roots.**

It seems from the experiments described, that if we feed any considerable quantities of these with clover, there will be some loss, with the better qualities of hay more, while with poor hay, straw, and cornstalks, the case will be still worse, for they contain very little nitrogen. It would be very wrong, however, to give up the use of roots on this ground. The proper course is rather to use them so as to get all the benefit that can come from their use, and have little or no waste. This can be done. Indeed it is done continually. The method has been repeatedly pointed out, to wit: *Use potatoes, beets, or other roots, with hay, straw, or other coarse fodder; but at the same feed oil-cake, bran, bean-meal, or malt sprouts, etc., each one of which contains considerable albuminoids, and each will add needed food elements, and enable the animal to digest and use a much larger part of the coarser hay, straw, etc.*

I should be glad, if there were space, to describe experiments in which it is most conclusively shown that when rich nitrogenous and non-nitrogenous foods together, are mixed with hay and coarse foods, the latter suffer little or no loss in digestion. A great many feeding trials have been made in the German Stations, to determine in what proportions different food materials may be mixed to secure economy in feeding. The fodder tables in previous articles are based on these. And, so soon as we shall have prepared the reader by study of the principles upon which they are founded, to understand and rationally use them, I hope to give a considerable number more.

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LATE PASTURING MEADOWS.—As a general rule it is better to avoid pasturing meadows, after the growth has ceased for the season. But there are exceptions to this rule, there being some cases in which we would pasture as closely as possible. Where the soil is rich, and the aftermath heavy, there may be a mass of dried dead stuff in the bottom next year, which will interfere much with the mowing, unless it is pastured down now. In this case we would pasture the meadow closely, and give some top-dressing, if necessary, taking care to spread the droppings of the stock evenly. Again, strong but thin clover and grass meadows will be benefited by close pasturing, by which the stubble will be eaten off, the coarse growth rendered finer and closer, and the yield of next season be improved in quality. A moderate top-dressing of fine manure will be of more value than all the stubbly aftermath.

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## Ogden Farm Papers.—No. 68.

BY GEORGE E. WARING, JR.,

It is a very simple calculation for any farmer to make to decide the comparative profit of a crop of 15 tons to 10 acres, and of one of 30 tons to the same area. To secure the latter return by any ordinary process of American farming is both difficult and costly. It is evident, however, from the experience of many parts of Europe, that such crops may be obtained by the aid of well-managed irrigation; and there seems to be no good reason why this valuable agent of fertility may not be as well applied here. Any farmer who has observed the effect upon grass of an occasional natural overflow from a brook or river, will readily accept the testimony of those who assert the profitableness of the systematic flooding of grass lands by artificial means. It is not easy to see why a system which has from time immemorial been so successfully used in so many parts of the world, has thus far failed of anything like a regular introduction into American farming; it must be because its processes and results are not understood, and it seems worth while to describe them here with some care.

The great effect of irrigation is due chiefly to the water itself, and pure spring water made to flow over the land at proper times and in a proper manner, produces astonishing effects. The more foul the water is with either organic or earthy matters, the more good will it do, because in addition to its own effect in dissolving the plant-feeding matters of the soil, it deposits in its slow course any impurities that it may contain; therefore, a muddy stream is better than a clear one, and a stream that receives the drainage of barn-yards is better than one flowing clear from the hills. An ordinary brook, having its source in wooded uplands and among pastures where cattle drop manure, is especially valuable.

The water supply for irrigation will be sometimes from a running brook which, at least during the irrigating season, (spring and fall), will have a sufficient flow; and sometimes from the storage of rain-water floods, held back by artificial dams with gates for letting on and shutting off the flow at pleasure. While the natural supply is available in a vast number of cases, there are many others where artificial storage must be resorted to, but this is so simple and, compared with the results to be gained, so inexpensive, that no one need be deterred from making the improvement who has tolerable conveniences for storing the water of heavy rains.

The following directions will be confined to the use of brook water, where there is a constant supply without artificial storage. The modifications necessary for an artificial supply will suggest themselves. If the brook delivers directly upon the highest part of the land to be irrigated, some trouble and engineering will be saved; if the water has to be led to a distance before beginning its work, it should usually be carried in a nearly horizontal gutter running along the side of the hill after the manner of a mill-race; and it should always be led into the irrigation field at a low velocity; if the brook approaches the field with a rapid slope, it should empty into a small pond or basin to check the flow. Wherever convenient, the main course of the stream should be led outside of the field, lest in time of floods it should wash away or disturb the irrigation gutters. It is desirable to keep these always intact, and to have them grassed to their very bottoms, so that they may retain their form and relative depths. The time during which it will be necessary to have water flowing through them, will not be long enough to injure the grass.

In the preparation of ground for irrigation, the first desideratum is to secure proper drainage, (either by surface gutters or under-drains), for any parts that are inclined to retain water. After this the conformation of the land must be studied, and it must be so laid out with leading gutters and catch water-drains that the irrigating flow may be spread evenly over the surface, and finally withdrawn to a suitable outlet. In this view all fields may be regarded as belonging to one or more of these three classes: 1st. Those having irregular slopes. 2nd. Those having a uniform slope in one direction. 3rd. Those which are quite level. All three of these conditions will sometimes be combined in the same field.

1st. Where the inclination is irregular, the arrangement will have to depend, of course, upon the conformation of the surface, but the accompanying illustration, fig. 1, will indicate how such cases are to be treated. The field is supposed to contain 10 acres. The land slopes in the direction of the shading lines; the dotted lines are lines of equal elevation, the dotted line 5 5, for instance, shows where a horizontal plane at an elevation of 5 feet above the outlet would intersect the surface of the ground; 10, 10, indicates the intersection of a plane 10 feet above the outlet. And in like manner the levels are indicated up to 30 feet. *B, B,* is the main irrigating channel, (either natural or artificial). The lines of equal elevation having been staked out on the ground by the aid of a surveyor's level, the irrigating gutters should be located on or near to these lines. They should be only so deep as may be necessary to carry a stream deep enough to flow smoothly, (8 inches will be enough). Having been made as accurately as they can be with a spirit level, they may still need a little correction after the water is let on, by raising or reducing their banks slightly. In the field in question there are five pairs of these gutters, 1. $1^1$, 2. $2^1$, 3. $3^1$, 4. $4^1$, 5. $5^1$. At the lower edge of the field two drains, (0.$0^1$), should be arranged to collect the effluent water and return it to the main channel. If the flow of water is sufficient to run in a thin film over

the whole length of the bank, all the better, if not, it will have to be let out little by little, through temporary notches in the bank, one set being closed and another opened consecutively as one strip after another has been sufficiently watered. In a field of this character, especially where there is an abundant supply of water, it is best to begin the irriga-

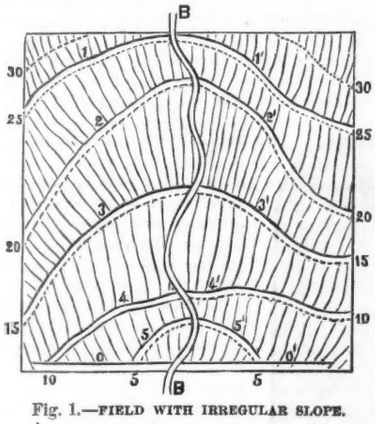



Fig. 1.—FIELD WITH IRREGULAR SLOPE.

tion with the highest gutter; and indeed, if there is water enough, the whole field may be irrigated from this point, each subsequent gutter arresting and concentrating the diffused flow of the one above it, and starting it again in a uniform sheet. The whole will finally be collected and withdrawn by the outlet drain. Where the amount of water at command is slight, and more care is needed in its distribution, it may be well to begin with the lower pair of gutters and, in whatever way the work is done, it will usually be best to irrigate only one side of the field at a time, concentrating the whole flow in one volume. The direction of the water in the ditches may be most easily changed by the use of several hand-dams made of iron about $^1/_{16}$ inch thick, and formed as shown in fig. 2. This dam must be large enough to close the channel entirely. Placing one dam in the main channel below the lowest gutter, and another at the entrance of gutter 5', the whole flow will be thrown into gutter 5; when the area reached by this gutter is thoroughly watered, by moving the dam to its entrance, the flow will be turned into 5'. By moving the dam in the main channel to a point just below the next pair of gutters, the water will be turned into these, and so on until the field is finished. These portable dams will bring any part of the system under perfect control.

2nd. Fig. 3 shows the arrangement for a field having a uniform slope from N. to S. In this case the lateral gutters are to be managed as directed for the preceding case, but as the slope is uniform, they will be straight. The water after having completed the irrigation, is carried to the outlet by the drains *d*, *d*. In this case, as in the other, the whole field, or the whole of each side may be flooded from the highest gutter, or it may be flooded little by little, according to the amount of water at command.

Fig. 2.—IRON HAND-DAM.

3rd. Fig. 4 shows the arrangement for a perfectly level field. Here the expense of preparation will be greater, but still not beyond what the result will amply justify. The whole area must be thrown into "lands," or ridges, say about 20 yds. wide, each land having its crest at the positions of the black lines numbered from 1 to 10, with valleys between them as represented by the dotted lines. Nearly the whole of this work of grading can be done with the plow, back furrows being turned for the crests of the lands, and the dead furrows being in the valleys. For lands 20 yards wide the difference in elevation between crest and the valley should be about 18 inches. After sufficient earth has been thrown to the ridges to make the necessary difference of elevation, a certain amount of hand-work will be necessary to give uniformity to the slope. After this, the whole field should be seeded down to grass and allowed to form a good sod. Then the irrigating gutters and outlet drains should be formed on the crests and in the valleys, the sods being laid carefully aside and the small amount of earth excavated, spread where it will fill any irregularities of surface that may be left. Then the sods should be returned to the gutters and drains and allowed sufficient time to take a good hold on the soil before the water is let in. This preparation may take two seasons, but it is to be considered that an irrigated meadow need never be broken up, so that the work now done is done for all time.

If there is enough water to maintain its fertility, it will continue productive for generations. The "section" at the left-hand side of fig. 4 shows in an exaggerated form, the manner in which the slopes, gutters, and drains are arranged. On level land the water may be admitted and withdrawn at any point, and I have arranged for it to enter at one corner, the channel of supply passing across one side of the field, and escaping at the corner diagonally opposite through a drain lying opposite to the inlet channel. The inlet channel must be on a ridge a trifle higher than the crests of the lands, communicating at each of these by an opening into its gutters, unless the amount of water available is ample to make a perceptible flow over the whole area at once, it should be admitted to only one or more of the lands at a time. This question is to be decided by the capacity of the stream, which must be sufficient to overflow the gutters with considerable rapidity, so that too much of the water will not be lost by infiltration. Irrigation by this plan is quite

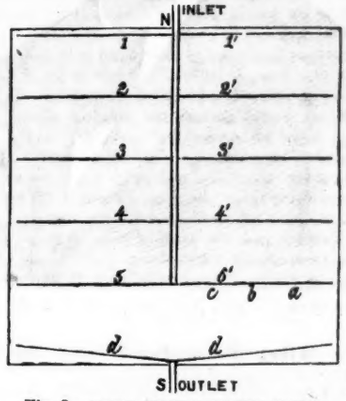



Fig. 3.—FIELD WITH UNIFORM SLOPE.

rapid, as the water has only to run about 30 feet before it reaches the drain by which it is carried off.

The foregoing plans assume that the quantity of water available is enough for the complete irrigation of all the land reached by a single gutter. If it is not enough for this, it will not effect the profitable irrigation of level ground under the system shown in fig. 4; but it may still be made to answer a good purpose on all ground having an inclined surface, either by the use of the occasional outlets described above, or by laying the gutters not level, but with slight inclination, say ½ inch in 100 feet. Such inclined gutters will tend of course to carry the flow to their extreme ends, overflowing say the last 50 feet, (more or less), of their length. When the ground reached by this overflow has been sufficiently watered, by striking in a dam 50 feet above the end of the gutter, a further section will be watered, and so the whole field may be reached successively.

The application of irrigation water should not take place as a rule when the grass is large. Copious waterings at frequent intervals throughout the autumn are beneficial, and if the intervals are long enough for a complete draining and aëration of the soil, the watering can hardly be too frequent in the spring of the year, say until the crop is a third grown. Then, unless the grass is visibly suffering from severe drouth, the water should be kept entirely off until after mowing. After this, during hot weather, light irrigations at night and in cloudy weather will be beneficial, and if judiciously managed, may be made to produce a good second cutting.

Irrigated fields may be pastured by cattle or sheep, (preferably the latter), but only when the

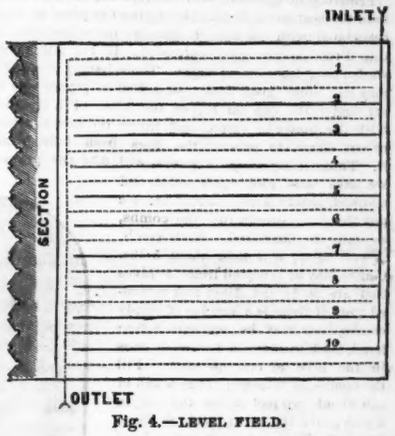



Fig. 4.—LEVEL FIELD.

ground is dry and firm, so that the edges of the gutters will not be disturbed by poaching. Whether used for pasturing or for mowing, it is beyond peradventure that the crop will be very greatly increased, and that under conditions at all favorable, the cost of preparing the ground and of the slight labor needed in directing the watering will be largely repaid. I know of no American experience to which I can point in illustration of this fact, but only because there is no American experience on the subject, (this side of the far western states and territories, where irrigation is a necessity for all crops). In many parts of Germany, Italy, France, Spain, and the East, and in Mexico, the value of pure water irrigation is amply attested by constant practice, and any one who will study the records of its effect, will see that in assuming an increase of crop from 1½ tons per acre to 3 tons per acre, I have by no means exceeded the truth. Aside from this, as irrigation meadows are permanent meadows, the whole cost and inconvenience of frequent breaking up and re-seeding is done away with; and so much of the farm as is brought under this system may be depended on for regular and permanent productiveness, without reference to the frequent drouths which interfere so sadly with our calculations in ordinary farming.

The gutters and ditches will interfere slightly, but not very materially, with the use of the mowing machine, and with two or three portable bridges, both this and the hay wagon may be easily taken to any part of the field. It has not, of course, been possible in a short sketch like this, to give clearly the detailed directions which fill volumes of scientific books on the subject, but I have tried to give enough of the leading features of the work to enable an ingenious and enterprising American farmer to experiment in a small way without the danger of going very far wrong.

## Bee Notes.

BY L. C. ROOT, MOHAWK, N. Y.

[The Department of the Apiary, formerly so ably conducted by the late Mr. Quinby, will hereafter be in charge of Mr. Root, who was the partner of Mr. Q., and therefore familiar with all the details of his successful practice. ED.]

### Preparing Bees for Winter.

Success in wintering will depend very much upon the present month's operations. If colonies are sufficiently populous, and have a prolific queen, the next important step is to ascertain the amount of honey in each hive, and if any are found wanting, to give them a supply. We must first know what the hive, combs, and bees, will weigh without honey, and add 20 lbs. for in-door wintering and 30 lbs. for out of doors, which will be a sufficient supply. To determine the amount necessary, weigh an empty hive and frames, and allow 10 lbs. for bees and combs. In some cases this will be an over-allowance, but with old combs, containing bee-bread, it will be found to be a fair average.

The cheapest and best food may be prepared by using *A* coffee sugar;" add 4 lbs. to a quart of water, bring to a boil, skim, and allow it to cool. This syrup is more desirable than honey, as it is not liable to induce robbing while feeding, and the bees winter equally well upon it.

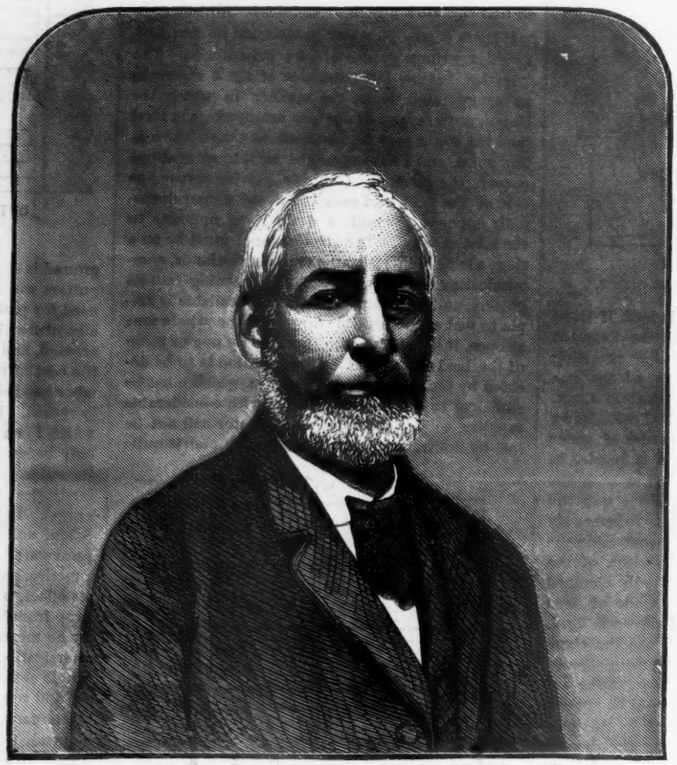
Probably no question will interest bee-keepers more than the best way to feed. During the five years we were associated with the late M. Quinby, our experience in this direction was quite extensive. In the fall of 1869 we fed over 5,500 lbs. of sugar. Those having box-hives may use some good feeder, or a dish of proper size to set under the cap on top of the hive. Fill the dish with the honey or syrup, and throw on fine shavings or cut straw, to prevent the bees from falling into it. Those using movable frames will find the process we have most thoroughly tested and adopted, practical and convenient. We put the feed directly into the combs, as will be described. Each comb, if well filled, will hold about 5 lbs. Combs may be removed from the hives that are to be fed, filled and returned; or, if there is a surplus of empty combs, they may be prepared before hand, and exchanged for empty ones in the hive at one operation. Fill the combs as follows: Take a can or tub about two feet across the top, in which place the syrup made as above directed. Then take a board a little wider than the depth of the frames, and nail a strip on each edge, which shall project about one inch above, to prevent the liquid from running off the sides of the board, and to conduct it back into the tub. Place one end of this board on the tub, and the other upon legs elevated enough above it, so that the feed will run off freely, (see fig). Then, in a common quart dipper, punch $^1/_{16}$-inch holes, about $^3/_8$ of an inch apart, over the bottom. Place the frame of empty comb on the board, and dip up the syrup, letting it drain into the cells. A little practice will indicate the distance the syrup must fall, as there must be force enough to drive it to the bottom of the cell, and not so much as to cause it to spatter out. In turning the combs to fill opposite sides, care should be taken, or the combs may fall out of the frames. To prevent this, use a piece of thin board, the size of the frame, placing it under it while filling, and raise the comb with it to an upright position, and then place the board on the opposite side, and fill as before. As fast as the combs are filled, set them up perpendicularly, where the extra syrup may drain off. These operations must be performed in a room where bees can make no trouble. Combs filled with syrup must be placed in the hives after the bees stop flying at night. Too much care cannot be taken to prevent robbing. After the required amount is put in the combs, it is well to weigh the whole again, to see that nothing is lost by robbing. Feeding should be done as early as possible this month, while it is warm enough for the bees to seal up the cells. In colder latitudes it would be well to do it in September, especially if the bees are to winter out of doors. If, by weighing, some

FILLING COMBS.

hives are found to contain more than the necessary amount of honey, heavy combs may be exchanged for light ones from other hives. Colonies may be unfit for winter from containing too much honey. The idea of wintering light swarms, or those with few bees, we can not oppose too strongly. In all our practice we have not found a point in its favor. A colony in good condition for winter has plenty of bees, a fertile queen, 20 to 30 lbs. of honey or syrup, and a free passage through the combs.

## The Late Moses Quinby.

In July last we announced the sudden death of Mr. Quinby, who for many years had been a contributor to the *Agriculturist*; in response to the requests of several interested in Bee Culture, and as a tribute of our own respect, we give a likeness of



MOSES QUINBY.—*Born April 16th*, 1810, *Died May 27th*, 1875.

him in the present number. The portrait is from a photograph selected by the members of his family, and very satisfactorily reproduces the features of our Great Apiarian.

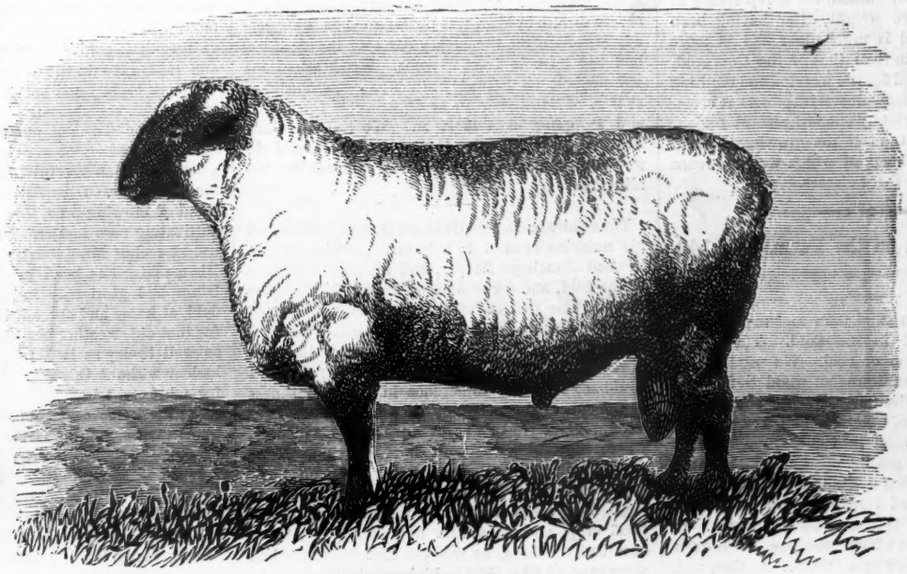
CLEANING UP.—The rubbish which is left in the fields, in the orchards, gardens, and around the yards, at the close of the season, furnishes hiding places for a vast number of vermin. Eggs and larvæ of destructive insects, chinch bugs and other pests find a safe refuge, wherein to pass the winter in corn-husks, stalks, and stubs, left upon the fields, and upon or beneath pieces of bark, chips, weeds, loose boards, and in corners of out-buildings. If the rubbish is gathered, raked up with horse or hand-rakes, and burned, and buildings whitewashed, myriads of vermin would be destroyed and prevented from propagating. As soon as the fields are cleared from crops, and work in the gardens and orchards ceases, a general clearing up should be made, and no quarter given to vermin of any kind or anywhere.

## The Foot and Mouth Disease.

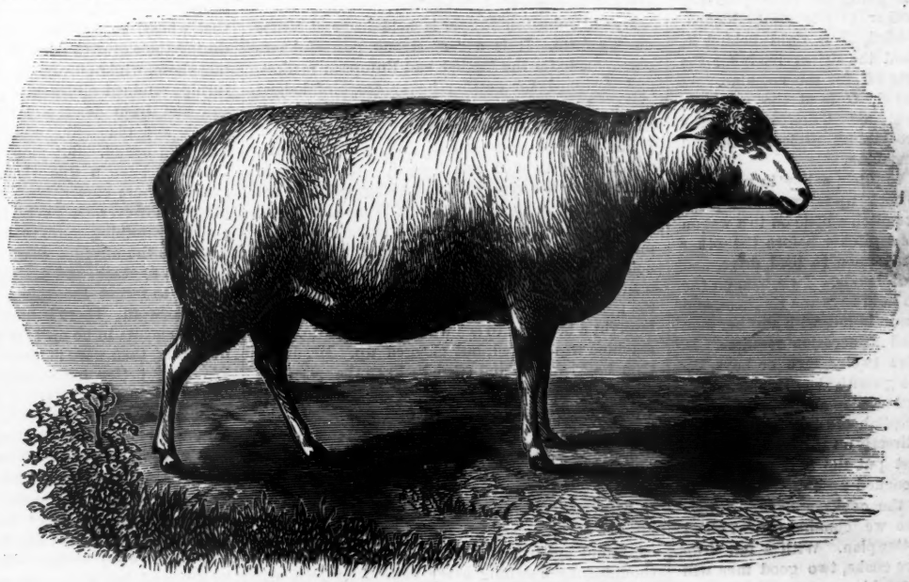
A severe out-break of the so-called "foot and mouth disease," or epizootic aphtha, has recently occurred in the southern part of England. In the county of Dorset alone, which is the center of the disease, 8,000 cases were reported in one week. All through the country, from the southern counties to Scotland, the disease is active, and is giving the farmers much trouble. Doubtless the unusual wetness of the season has been the chief cause of the increased virulence of the disease, which has existed sporadically all over the country, for some years past. All the efforts of the farmers and veterinary surgeons, aided as they have been by the legislative appointment of sanitary inspectors, charged with the duty of "stamping out" the disease by summary slaughter and burial of infected cattle, or by the isolation of infected herds, have been unavailing. The disease attacks cattle, sheep, and pigs. Hares and rabbits suffer equally with these, and are a frequent cause of spreading the contagion from one pasture to another. The disease has appeared at times at several places in this country, but fortunately so far no serious out-break has occurred. Neither do we think such an occurrence probable, on account of our more favorable and healthful climate, our less luxuriant pastures, and our less artificial style of feeding. Nevertheless, we have had an unusual season. The long continued wet weather has furnished one condition favorable to the occurrence of this or other epizootic diseases in low pastures, or in localities where sudden alternations of temperature are experienced. Hot days succeeded by chilly nights, when the lower stratum of air is filled with moisture or fog, are especially provocative of a typhoid type, such as aphtha, ("foot and mouth disease"), anthrax, (black quarter or carbuncular erysipelas), or splenic apoplexy, which is the well known "Spanish fever" of the western herds. These are all blood diseases, marked by a very depressed condition of the animal, high fever, difficulty of breathing, disorder of the brain, evinced by stupor or convulsions, and a highly inflamed and often gangrenous condition of parts of the body. In the "foot and mouth disease," the feet, tongue, and lips, are affected. Blisters appear on the coronet around the hoof, at the heels, and between the claws of the hoof; also on the lips and tongue. These break, leaving raw surfaces, which may run together and ulcerate. The animal can neither stand, walk, nor eat. It may recover in two or three weeks, when the disease has spent itself, or it may die very rapidly, with the hoofs sloughed off, and abscesses formed upon parts of the body. The first symptoms are a fit of shivering, followed by a cough, indisposition to move, fever, and a desire to get away from other cattle. The hind legs are occasionally stretched out and shaken, and on examination are found blistered as above mentioned. Saliva flows freely from the mouth, and the lips will be found hot and blistered. The proper treatment is to give a gentle purgative, as 8 oz. of Epsom salts, with 2 ounces of ginger, in sweetened water, at once. Then careful nursing is all that can be done. The mouth should be washed frequently with a mixture of 1 quart of water and 1 ounce of tincture of myrrh. In the absense of the myrrh, 1 ounce of alum may be used, with an infusion of a handful of sage leaves, in hot water. The large blisters on the tongue and lips should be opened with a sharp-pointed knife. The feet should be washed with warm water and carbolic soap, and bound up in cloths, wetted with a solution of 2 drams of chloride of zinc, in one pint of water. Warm bran and oatmeal slops should be given, and infusion of linseed meal. No solid food should be offered. The affected animals should be separated from the others, and kept quiet in well ventilated clean stalls. In case an animal should die, the stall where it has lain should be thoroughly cleansed with hot lime-wash, and the mangers washed with hot lye or soft soap suds, before another animal is put into it.

## Cross-Bred Sheep.

The cross-bred races of sheep are the most popular breeds with those who look to the wool and mutton for their profit. The pure-bred sheep, so-called, or those which go back to a long distant ancestry for their origin, are chiefly bred not for their value in wool and mutton, but for the purposes of crossing upon other races for the production of a really profitable market sheep. The pure South Down, the Cotswold, and especially the Leicester, are found to be less profitable sheep for the farmer than the Oxford, the Hampshire, and the Shropshire sheep. These last are cross-bred sheep, and amongst English farmers, go by the significant name of the "rent payers." In Germany and France the pure breeds have been found less profitable than cross-breeds, and we are now making the same discovery in this country. There is a popular need for a sheep which produces a large carcass of choice mutton, along with a fleece of wool which bears as high a price per pound as that of any of the pure races, and which can be brought to early maturity and made to weigh heavily at less expenditure than the pure-bred sheep. At the same time we need a sheep of hardy constitution, which can stand the rough usage of the farm better than the high-bred races. We know of no farmer, unless he has been most favorably situated, who has been able to keep a flock of pure-bred sheep of the kinds mentioned up to their original standard. It does not pay a farmer to keep the pure breeds for the production of mutton at 6 to 8 cents a pound. But he can produce half-bred sheep by the use of pure-bred rams, whose mutton will be worth the highest price of the market, from ewes whose mutton would not bring more than 4 cents a pound. Thus the business of breeding pure-bred sheep to supply rams to farmers for the purpose of improving their flocks has reached to great proportions, and must still increase. But the English bred sheep are not exactly what we want. We want some native breeds, which shall not need to go through a course of acclimatation, nor to be periodically re-inforced by new blood imported for the purpose, thus making us dependent on foreign breeders for our stock. As regards the mutton and long-wool sheep, we need now to go through just such a course as has been long pursued with the American Merino, and which has resulted in the production of the best fine-wool sheep, at least for our purpose, in the world. A competent judge of Merinos in Australia recently stated that an American Merino ram, imported into that country, could not be excelled in any other country in the world. We need to arrive at the same result as regards breeds for mutton and combing wool. Some of our breeders are making praiseworthy efforts to this end. We mentioned, a short time ago, the attempt made by Mr. Crozier to establish an American cross-bred sheep, and Mr. Joseph Harris, of Rochester, exhibited at the last meeting of the New York Wool Growers' Association a sheep produced by a cross of the Cotswold and Merino, which promises to become a valuable race of sheep, both for mutton and wool. For the purpose of showing what has been done in the way of crossing elsewhere, and with what success it has been done, we have reproduced the portraits of two cross-bred sheep, taken from photographs from two excellent foreign publications, the London Agricultural Gazette, and the Paris *Journal d'agriculture pratique*. The first of these is a portrait of a Hampshire Down sheep, which is a cross of the South Down ram upon a white-faced, long-horned, coarse, inferior sheep, which has existed for a long period in the county of Hampshire in England. The prepotent influence of the pure-bred South Down has got rid of the horns, and has given a black face, while the carcass and fleece have been so improved by judicious inter-breeding, as to greatly surpass those of the improved parent. These cross-bred sheep were found by Mr. Lawes in his elaborate experiments in feeding sheep to make more mutton from a given weight of food than the South Down, which is so superior a sheep to the old race which furnished the other parent, that it has entirely supplanted this latter and caused it to disappear altogether from its old home. The Hampshire sheep has been such a successful cross, that it has been made the basis of another cross-breed, the Oxfordshire sheep, which has sprung from the Hampshires and the Cotswolds, and is now a close rival of both its parents. The sheep, whose portrait we give, was bred by Mr. Rigg, of Hampshire, England, and has taken several prizes as a two-year old ram. The Hampshire Downs mature quickly, the lambs weigh 100 lbs. at a year old, and the mature sheep at two years weigh alive 180 lbs., yielding a mutton that is not overloaded with fat, and has a good proportion of juicy, well-flavored, lean meat. The fleece averages about 7 pounds of wool, suitable for combing. Our second illustration is a portrait of a cross between the English Leicester and the French Merino. It is a somewhat unusual cross, but has resulted very successfully. It was made by Mons. M. E. Pluchet, of Trappes, France, who has now a flock of 500 of these sheep. The flock was commenced in 1839 by crossing Rambouillet Merino ewes with a pure Leicester ram. It was only after many attempts that an entirely successful result was reached. The half-blood ewes being unsatisfactory, were crossed with rams of quarter Leicester blood. This cross produced a much better sheep than either of the parents; but after some years of inter-breeding it was not found sufficiently profitable, and the ewes were crossed with a pure Leicester ram, and the produce of this cross were crossed with rams of the previous cross, or of three-eighths Leicester blood. This produced a sheep with 8½ sixteenths of Leicester and 7½ sixteenths of Merino blood. This sheep—of which the illustration is a portrait—yielded at 24 months old, and on the same pasture, as much meat (but of superior quality and greater market value) as the large French Merino produced at 36 months; the fleece, being much finer and softer, but not so long as the Leicester, weighed 9½ lbs., and sold for more than the Merino wool. After many years of inter-breeding, this sheep continues to improve in quality by close attention to selection of parents, and is very profitable.



HAMPSHIRE DOWN SHEEP



CROSS BETWEEN LEICESTER AND FRENCH MERINO SHEEP.

In Germany the favorite cross is between the Cotswold and Merino, and at the Vienna Exposition of 1873 many specimens from some large flocks of these cross-bred sheep were exhibited. They were the in-and-in bred produce of the first cross, and weighed at 14 months old, when they were usually marketed, 140 to 148 lbs. alive. The mutton of these sheep was highly valued, the sheep selling at 8 cents a pound live weight, after having been sheared. Their wool is much finer and is more thickly set on the skin than that of the Cotswold, and is in good demand for the worsted and clothing manufactures. In these successful efforts at cross-breeding there is certainly encouragement for our breeders to attempt to meet the growing demand for these improved sheep, of which we have room for more than two or three classes.

## Walks and Talks on the Farm.—No. 142.

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Thrashing by steam more than met my expectations. We thrashed in the field. The engine will burn either wood or coal. We used wood. We drew two cords of four-foot wood to the machine, and set up a circular saw. As soon as we had 10 or 15 pounds of steam, a belt was put on, and we sawed the wood into short lengths at a lively rate. We were getting up steam at the same time, and thought this much better than sawing by hand. We commenced thrashing with 80 pounds of steam. It was a ten-horse-power engine. It thrashes no faster than a horse machine, but it does not get tired, and keeps up a steadier motion, and is under more immediate control.

In thrashing as you draw in from the field, the only difficulty is in gathering up the rakings. I had the field raked, and the rakings put into cock before we commenced, and kept the steel horse-rake going after the wagons while we were drawing in, so that everything was cleaned up as we went along, and when we were through we were through, and the whole field done, and the work finished. I had three teams and four wagons. We put on a load of rakings, and drew it up to the machine, and let it stand there without horses, to commence on, and sent the other wagons to pick up rakings. In drawing sheaves, one good pitcher and three wagons, will keep the machine going. One wagon (*A*) is at the machine; another wagon (*B*) has just been unloaded, and is going on its way to the pitcher; while the other (*C*) is being loaded. By the time *C* is loaded, *B* is right behind it, with the ladder up, and the driver ready for the sheaves, while *C* starts off for the machine. As soon as *A* is unloaded, *C* is at the machine, ready to take its place, and *A* drives off to the pitcher. It gets there just as *B* is loaded and ready to start for the machine.

It requires one man to pitch, a boy to rake, and (in my case) a man to cock up rakings, and pitch on a load of rakings, or pitch a little on to a wagon whenever it reached the pitcher before the other load was finished. Three men to load, drive, and unload. A man to cut bands. Two men on the straw stack. A boy to hold bags and tie them, and another to draw the grain home, with another man to lend a helping hand as occasion requires. In other words, we require twelve men or boys, besides the four men who go with the machine.

In thrashing barley, I was in doubt as to which was the better plan, to pitch the gavels or bundles as left by the reaper, directly on to the wagon with barley forks, or to first put the barley into cock. I tried both plans. I cocked up half the field, and had it raked between the cocks, and the rakings put into cocks before we commenced. This I found *decidedly* the better plan. With a fair crop of barley, put into nice cocks, two good men will pitch as fast as the machine can thrash; but in picking up the gavels with barley forks, it was all that four pitchers could do to keep the machine going. Until better advised, I shall always cock my barley in future. When we have, as we soon shall have, a good machine to bind, it will of course be better to bind our barley into sheaves; but when left loose, it is better to make it into good-sized cocks. But the real point in managing barley, is to grow a good heavy crop, with plenty of straw. Then, with good weather, harvesting and thrashing barley is easy and pleasant work. But a poor, light crop of barley, on cloddy or weedy land, is difficult to cut, hard to rake up clean, and a nuisance generally. My crop this year, owing to the severe drouth in May, was not as good as I expected, especially on the clayey parts of the field. I had 840 bushels from 28 acres. We thrashed out 480 bushels on Saturday afternoon—commencing at 2 P. M., stopping 15 or 20 minutes for lunch, and stopping at 7:45 P. M. We had to work lively to get the barley to the machine, but I do not think the machine waited ten minutes for us, altogether.

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The Squire had a new Hubbard Reaper, and he sent his machine around to help me. Another neighbor had a Buckeye Reaper, and his son brought it to the field, and for some time we had four reapers going. The Deacon came along and was invited to act as Judge, but declined the honor. I watched the working of the different machines as they followed each other round and round the field. I could see very little difference in the smoothness of the cut, or the evenness of the bundles. They all did good work, except on a few clay spots, where the barley was very short and thin. None of them cut up the barley entirely clean on these spots, and we had to leave a little for the sheep and pigs. But where the barley was anything like a good crop, and no matter how heavy it was, or how badly lodged, as was the case where we had some mangel pits, the machines worked to perfection. If there is any choice between these machines, it must be sought in the ease and simplicity of regulating the hight of cut, or the dip of the cutter-bar, or of adapting the rakes to high, short, light, or lodged straw. The truth is, our mowing and reaping machines, so far as doing the work is concerned, are about perfect. I was quite amused with the talk of the four drivers, when we stopped to examine and compare the different machines. Each man thought his machine the best. And in fact, when a man gets used to a machine, and has confidence in it, and knows how to regulate it, that *is* the best machine for him. The new Hubbard machine is very light, and easily managed, and does good work. By changing horses and keeping them at a lively walk, the man cuts 15 acres of barley with it in one day.

My old Johnston Reaper is held in great honor on my farm. It is a very strong, powerful machine, made for the English and European market, and designed for cutting heavy crops of lodged grain. I have a special affection for it. I think it is six years ago since I first heard of the machine. I had a great crop of oats and peas that year, which were twisted and lodged, with the upper parts of the pea vine still green and growing. I set six men to cut them with short Winsted scythes. It was hard work and slow, half an acre being as much as a man could do in a day. A farmer in the neighborhood told me that there was a machine made at Brockport, that would cut these peas, and the next day Mr. Johnston and two of his associates brought a machine to see what they could do. The machine was started, but clogged up. Mr. Johnston took a fork and tried to keep the platform clear. They managed to get round the field, Mr. Johnston evidently trying to find out where the trouble was. I was sorry for his disappointment, and said, "You need not feel bad about it. It is asking too much of any machine to cut such a tangled mass of green stuff as this."—"Can we go round the field once more?" he asked.—"Certainly," I replied, "do just what you like," and the team started round again, with Mr. Johnston calmly and thoughtfully watching every motion. "That will do," said he, as they came round to the gate, "it is no use trying more to-day."—I thought he had given up the matter, but he had simply discovered where the trouble was.—"I can do it yet," he said, quietly and modestly.—And sure enough, after taking some part of the machine to the factory, and making the necessary change, we put on the horses for another trial. The six men were cutting in the field. The machine was thrown into gear, the horses started, the fingers pushed under the peas close to the ground, the knives played rapidly back and forth, the rakes picked up the laid crop, and every other one was allowed to rake off the platform. It took me a few seconds to comprehend what we were doing. I could hardly realize the fact that *there*, right before my eyes, was a machine actually cutting that tangled mass of green peas and oats, and raking it into the desired bundles, and doing the work rapidly and better than we could do it by hand. But such was the case. On went the machine. The six men put up their scythes. Their occupation was gone—or rather changed. For it is a fact, that a successful machine creates a demand for *more* labor. I employ no fewer men. But instead of mowing peas, they are hoeing mangels or cultivating corn-fodder. I have not had the pleasure of seeing Mr. Johnston from that day to this. His machine has been greatly improved, and has triumphed gloriously in many a hotly contested field, at home and abroad, but I have an affection for that old, weather beaten machine, which works as well to-day as it did then, and which I rarely look at without thinking what a grand thing it is for mind to triumph over matter—for brains to make the horse or steam engine do the work of human muscle on the farm.

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I propose to make this old machine cut my corn-fodder this fall. If it was sown broadcast, it would cut it easily. But I should no more think of sowing corn broadcast, than I should think of sowing mangels, or beans, or potatoes broadcast. It needs cultivating. All the broadcast corn I have seen this year, is now yellow, and is drying up, while mine, though it curls a little during the day, is growing luxuriantly, and promises a heavy crop. I think the machine will cut it, but I am not very confident. If it won't, our inventors must turn their attention to the matter.

It is twenty-five years ago this month, since I wrote my first article for the old Genesee Farmer. And I have been writing every month since. I have just looked over that old article. I was fresh from the great experimental farm of Lawes & Gilbert, and the article embodied some of their most important results. The burden of it was, raise more clover, peas, and beans, keep more stock, and make more manure. I say the same thing to-day, only I should put first, "cultivate the land more thoroughly, and kill the weeds."—I thought then that wheat, barley, oats, corn, and other cereals, during their growth gave off nitrogen into the atmosphere, while clover, peas, beans, vetches, and turnips retained all the nitrogen they got from the soil and from dews and rains. The theory was simple and plausible, and the practical deduction safe and sound. But more recent investigations failed to sustain this view. The advantage of growing more clover, peas, and other leguminous plants, however, is as certain as ever. And I could say nothing more to-day, than I said then in regard to the advantages of feeding food rich in nitrogen to stock, and saving the manure. But it is well to forget the things that are behind, and press forward. There is more to be done, and more improvements to be made during the next twenty-five years, than were made in the past twenty-five. We have better implements, better roads, better stock, and better prices. I sold barley from this farm twenty-five years ago for 37½ cts. per bushel. Now I can get $1.10. Combing wool was not worth over 25 cents a pound. Now it is worth 50 to 60 cents. I sold a lot of splendid butter to go round the Cape in a sailing vessel to California, for 12½ cents a pound, and it got there safe and in good condition. I will not say it was as good as the gilt-edged Jersey butter, which now brings a dollar a pound, but at any rate such butter would sell for three or four times as much as it brought then. Pork, and good beef, and choice mutton have doubled in price, and so have eggs, poultry, and fruit. Let us be thankful. The indications point all in one direction, and I see clearly written out on the years to come, "Cash for good farmers,"—"Good farming will pay better in the future, than in the

past."—Marvelous have been the improvements in our cities and villages. We are a great and mighty nation. But the increase of wealth and population has been greater in the manufacturing districts, and in villages and cities, than in purely agricultural districts. Farmers are now to reap great advantage from this state of things, especially those who furnish better beef, mutton, pork, butter, cheese, and wool. And this means better farming, fewer weeds, richer land, larger crops, better stock, and more liberal feeding—and more intelligent and prosperous farmers. Let the agricultural papers push on the good work. I hope they realize what a power they are for good. Twenty-five years ago I presume the *American Agriculturist* had but one subscriber, where it now has several hundreds, and whatever the number it may now have, it ought to be doubled.

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Two or three farmers have thanked me for publishing the weights of my sheep, and asking for further particulars. And *one* man has written to the publishers complaining that by giving the weights of my sheep I am using the columns of the *Agriculturist* for "puffing" my stock. Mr. Judd sent me this disagreeable extract from this complaining letter, but was kind enough to say, "I have confidence in your statements, and what we want is reliable facts."—These I try to give. We weighed our sheep and lambs July 16, and again August 16. The figures are as follows:

| *Nos.* | *Age.* | *Weight, July 16, '75* | *Weight, Aug. 16, 75* | *Gain in one month.* | *Remarks.* |
|---|---|---|---|---|---|
| 113 | 4 yrs. | 231 lbs. | 235 lbs. | 4 lbs. | Cotswold ram. |
| 224 | 2 " | 246 " | 265 " | 19 " | " " |
| 220 | 2 " | 259 " | 262 " | 3 " | " " |
| 221 | 2 " | 236 " | 249 " | 13 " | " " |
| 229 | 2 " | 224 " | 229 " | 5 " | " " |
| 246 | 1 " | 168 " | 173 " | 5 " | " " |
| 247 | 1 " | 187 " | 202 " | 15 " | " " |
| 250 | 1 " | 187 " | 198 " | 11 " | " " |
| 251 | 1 " | 158 " | 165 " | 7 " | " " |
| 253 | 1 " | 202 " | 218 " | 16 " | " " |
| 257 | 1 " | 169 " | 181 " | 12 " | " " |
| 258 | 1 " | 183 " | 200 " | 17 " | " " |
| 259 | 1 " | 171 " | 174 " | 3 " | " " |
| Gr'de | 1 " | 144 " | 146 " | 2 " | Cots. Mer. 1 cross |
| " | 1 " | 193 " | 193 " | 0 " | Two crosses. |
| " | 1 " | 195 " | 215 " | 20 " | " " |

These 16 rams gained 156 lbs. in the month, or 9¾ lbs. each.

The following are the weights of the lambs.

| *Nos.* | *Sex.* | *When Born.* | *Weight, July 16.* | *Weight, Aug. 16.* | *Gain 1 mo.* | *Remarks* |
|---|---|---|---|---|---|---|
| 423 | R. | Feb. 27. | 92 lbs. | 105 lbs. | 13 lbs. | Twins. |
| 268 | E. | " " | 84 " | 91 " | 7 " | |
| 429 | E. | March 1. | 72 " | 87 " | 15 " | |
| 421 | E. | " 2. | 80 " | 89 " | 9 " | Twins. |
| 263 | R. | " 2. | 87 " | 101 " | 14 " | |
| 265 | R. | " 3. | 81 " | 98 " | 17 " | Twins. |
| 282 | R. | " 3. | 83 " | 96 " | 13 " | |
| 283 | R. | " 8. | 78 " | 94 " | 16 " | Tripl'ts |
| 427 | E. | " 8. | 71 " | 81 " | 10 " | from 1 |
| 430 | E. | " 8. | 72 " | 86 " | 14 " | of oldest. |
| 432 | R. | " 13. | 107 " | 123 " | 16 " | |
| 287 | R. | " 14. | 89 " | 104 " | 15 " | |
| 284 | E. | " 14. | 81 " | 95 " | 14 " | |
| 422 | E. | " 19. | 92 " | 109 " | 17 " | |
| 290 | E. | " 19. | 86 " | 89 " | 3 " | |
| 297 | R. | " 23. | 89 " | 108 " | 19 " | |
| 438 | R. | " 24. | 91 " | 104 " | 13 " | |
| 279 | R. | April 5. | 77 " | 86 " | 9 " | |

These are all pure bred Cotswolds. The average weight of the 18 lambs, July 16, was 84 lbs., and Aug. 16, nearly 97¾ lbs., or an average gain per head of 13¾ lbs. During the month the lambs had been weaned, which set some of them back considerably, still the average gain will compare favorably with the figures given by Mr. Lawes and other English farmers. I think we may conclude that though our hot summers are not so favorable for rapid growth as the more temperate climate of England, we may hope for as good success in raising these high bred English sheep as we have attained in raising high bred Short-horn cattle.

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But a still more important question, at any rate one of much more general interest, is the results we may expect from using these high bred English rams on the common ewes of the country. As I have repeatedly said, my own experience is in every way favorable. Now, if any one thinks I say this simply because it may add a few dollars a head to the dozen or twenty sheep I may sell for breeding or crossing, he is welcome to his opinion. But as Mr. Judd says, let us have the facts. The following are the weights of all the *grade* lambs I have left, taken Aug. 16: 98 lbs., 94 lbs., 93 lbs., 90 lbs., 85 lbs., 78 lbs., 78 lbs., 72 lbs., 70 lbs., 68 lbs., 64 lbs. and 55 lbs., (twins), 62 lbs. and 56 lbs., (twins). We have been killing these grade lambs, and I can say is that I do not want fatter or better flavored mutton. It is really delicious, good enough for a farmer, and if any one wants better, let him get it if he can. The mothers and grandmothers of these lambs are common Merinos of which we have millions, and which can be bought at a slight advance over what their pelts are worth. One of these grade lambs from a common Merino ewe, weighed July 16, 72 lbs., and Aug. 16, 85 lbs. Another, also from a Merino ewe, weighed July 16, 70 lbs., and Aug. 16, 92 lbs., a gain during the month of 22 lbs. He is a big, rather coarse lamb with a heavy fleece of close wool, but which next spring will be long enough to pass for "combing."

Now what more do you want to enable us to furnish good mutton and good combing wool? Can any one desire more favorable conditions? We have pure bred long-wool sheep that can be bought cheaper than similar sheep sell for in England, the ewes can be obtained at a cheap rate; this grade wool is very scarce, and brings the highest price in market; the mutton is in growing demand, and will be still more appreciated as the supply increases.

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I spent yesterday with Mr. James Vick, on his seed-growing farms. Vick is a most genial man, and his is a delightful kind of farming. He has 30 acres in the city worth $5,000 an acre, and a farm of 65 acres five miles from the city, where similar land is worth only about $200 per acre. Experience seems to show that our nurserymen and seed-growers find it more profitable to buy high-priced land near the cities than to cultivate strictly farm-land farther out. If they can make enough to pay interest and taxes, the advance in real estate in process of time makes them rich. Then labor is cheaper and less uncertain near the city than in the country, and manure costs less. On his country farm, Mr. Vick, was paying men for hoeing $1.50 per day, of ten hours. They board themselves, commence work at 7 A.M. and quit at 6 P.M., with an hour for dinner. In the cities labor is 20 to 25 per cent cheaper. And such will continue to be the case until farmers are less unwilling to sell an acre or two of land at reasonable rates to steady men who want a home for themselves. I could hardly realize that I was on a farm as we walked through acres of phlox, petunias, asters, dahlias, etc., all in full bloom. A large windmill pumps water into half a dozen elevated railroad tanks, and iron pipes laid under ground carries the water to all parts of the farm. If I had such an arrangement I should want to put some Peruvian guano, sulphate of ammonia, or nitrate of soda into the tanks, and try the effects of liquid manure.

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## The Liver Fluke.

The "fluke" is a parasite that inhabits the gall-bladders and gall-ducts of a large number of animals. It has been found in the squirrel, the rabbit, hare, dog, sheep, deer, ox, horse, elephant, and also in man. It is the most destructive parasite

Fig. 1.—FULL-GROWN FLUKES.

that infests the sheep, causing a disorder that carries off whole flocks, when the proper remedies are neglected or unknown. The shape of the Fluke is flat, oval, with a thicker conical portion towards the head, and flattening out like a leaf at the hinder part. In fig. 1 are shown some specimens taken from the liver of a sheep, and in fig. 2, young flukes from the same animal; these are all of the natural size. This creature is highly organized, and is provided with an intricate digestive and circulatory apparatus. In figures 3 and 4 is shown the intestinal canal with the digestive organs. The mouth is situated in the conical head, and there is a second sucker below the first, on the under side of the animal. Its nutriment is derived from the bile of its host. Fig. 5 represents the veins and other circulatory organs.

Fig. 2. YOUNG FLUKES.

The sheep is the most seriously infested of any of the domestic animals. The disease caused by the presence of these animals in the liver, has carried off millions of sheep in a year. In one year 2,000,000 sheep died in England alone, and many millions have died in a single year in Australia and South America. Many sheep yearly die in this country from this disease, without any suspicion or knowledge of the cause. The disease is known as the "rot," or the "liver rot." It is caused by the obstruction of the gall-ducts by the flukes, which have entered them from the stomach. The parasites are taken into the stomach along with the food cropped in wet or marshy places, in which they pass one of the stages of their existence. If there are but few flukes, the sheep suffers little or no inconvenience from them, but if they are numerous, they choke the smaller ducts, arrest the flow of bile, and irritate and inflame the liver. The sheep suffers first from jaundice, which causes the skin and eyes to become yellow. At this stage the sheep thrives and fattens rapidly, and the yellow color of the fat of many carcasses of mutton that are sold in the market, is due to this bilious derangement. In a short time the sheep fails, the skin and eyes become white and bloodless, a watery tumor appears beneath the jaws, the abdomen swells from dropsy, the wool becomes harsh and easily parts from the skin, and after lingering some time, the sheep dies, completely rotten, with every organ diseased. A knowledge of the natural history of this parasite, teaches a simple and complete preventive. As the fluke passes the first stage of its existence in water, the eggs voided in the dung of the infected sheep being hatched therein, it is only in wet undrained pastures, or in the neighborhood of ponds, that the sheep can take them into their system. Sheep that are pastured on dry fields are exempt. Wet pastures and meadows should therefore be drained and freed from stagnant water. Where their presence in the sheep is suspected, a cure may generally be effected by administering the following medicines, viz: 3 oz. of saltpeter, 2 oz. ground ginger, 1 oz. carbonate of iron, (colcothar of vitriol), 2 lbs. of salt, mixed with 6 quarts of hot water; to this mixture is added 6 ounces of spirits of turpentine, and the whole is bottled for use, in pint or quart bottles for convenience. A dose is two ounces or two table-spoonfuls of the mixture, well shaken, given in the morning before feeding; no food to be given for three hours afterwards. The dose is repeated every fourth day three times. A cow's horn open at the small end, is convenient for giving the medicine. The flukes are never found in salt marshes and near the sea coast, and a regular supply of salt is an excellent preventive in those cases where the use of low lands for pasture can not be avoided. The wide distribution of the fluke in America, is now a well ascertained fact. It has been stated that it was not native to this country, and only existed in imported sheep. Last winter flukes were discovered in the liver of the hare, and in that of the deer in Minnesota, and we have examined a portion of a deer's liver, in which more

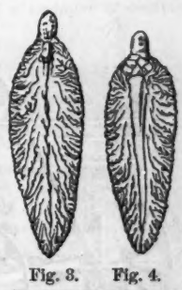


Fig. 3. Fig. 4. DIGESTIVE ORGANS.

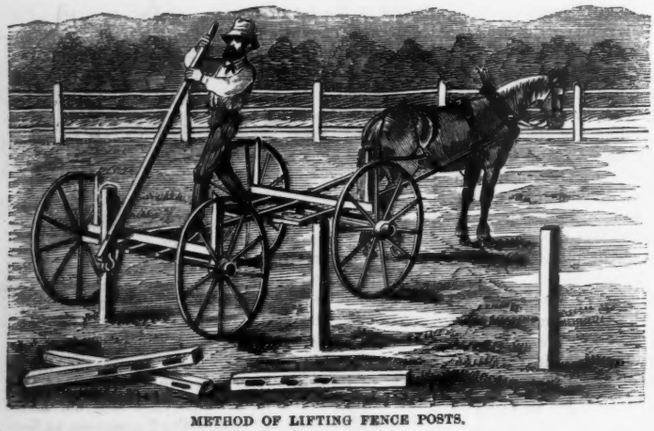
than a hundred of these parasites were imbedded. Fig. 6 is an accurate drawing—half life size—of a fluke taken from a deer's liver in Minnesota, by Mr. Joseph Batty, formerly connected with the *Agriculturist*, and an experienced naturalist. Numerous other specimens were sent by him to the Smithsonian Institute, at Washington, for preservation. The fact that this parasite abounds, should be a caution to owners of sheep to be on the lookout for its appearance in their flocks. The present season having been more than usually rainy, has been a favorable one for its increase in low grounds, and it is probable that during the coming winter we may experience more than usual trouble from this cause. Fortunately we have an unerring and timely symptom of the disease in the absence of the usual red color at the corner of the sheep's eye, and beneath the eyelid. When the sheep is seen to be ailing, and this sign is perceived, the above remedy should be administered without delay, and the sheep should have some extra nutritious food, linseed-cake meal being the best.

Fig.5. VEIN SYSTEM.

Fig. 6.—FLUKE FROM A DEER.

## To Raise Old Fence Posts.

To remove old fence posts in the easiest manner, there is required a bar or lever six or eight feet long, and furnished with a hook at one end. Then backing up the running gear of a wagon from which the box has been removed, near the post, the lever is laid across the hind axle, and hooked to a link of a short chain with a ring at one end, which is looped around the post as low down as possible. To get a long purchase, the operator may stand on the reach of the wagon, and then, by throwing his whole weight upon the bar, the post may generally be raised so far out of the ground at once, that it can be lifted the rest of the distance without the use of the lever. If this is not the case the loop of the chain is to be slipped down lower on the post, and another lift will bring it up. A bottom-board may be placed on the wagon, which will give good standing room, and then the posts may be loaded as soon as they are drawn out of the ground, and removed. The annexed engraving illustrates this method very clearly.



METHOD OF LIFTING FENCE POSTS.

PROCURING WINTER FEED.—At this season a forehanded farmer may profitably lay in a stock of feed for the winter. Bran, mill-feed, or even brewer's grains may be bought in quantities very cheaply, as occasion may offer. The grains may be heaped in a field, covered first with straw, and then with earth, just as roots are pitted, in which condition they may be kept in good order until spring.

## Poultry-Keeping as a Business.

There is more fascination than profit in poultry-keeping for those who know but little about it. The work seems to be very light, the fowls are supposed to be docile and easily managed, and the general idea is that there is nothing to do but scatter some corn upon the ground two or three times a day, and gather the eggs and market the fowls as fast as they grow fat. The numerous letters we receive, asking for information about poultry-keeping and the profits of it, are in great part from persons who possess this idea. For instance, one correspondent asks how many fowls will support a family of six persons, as though it was a matter of figures, and only necessary to procure a certain number of fowls and a house, and start them laying eggs and producing chickens to secure a permanent income. Now it is quite safe to say that any person who knows so little about the trouble and risks of poultry-keeping as this, would fail in it and lose his money, unless he should start with a dozen or two fowls, and go through an apprenticeship to the business. For a certain class of persons poultry-keeping is a very appropriate business, and may be made profitable. Those who are possessed of plenty of patience and perseverance, kindness and gentleness of disposition, a scrupulous love of order and cleanliness, a habit of close observation and quick perception, and a ready tact in finding out the cause when anything goes wrong, and in quickly remedying it, will generally succeed in keeping poultry, while those not so endowed will generally fail, and should never attempt it. Again, one must be able to justly appreciate either the difficulties or advantages of his location, such as the character of the land and its surroundings, the supply of food and the available markets. It would be folly to keep fowls on the borders of a forest or the margin of a swamp, on account of the vermin which such places shelter; it would be a great advantage to be located near a number of summer boarding-houses, where there is a good demand for eggs and chickens, or near a large city, where early plump chickens sell sometimes for 75 cents a pound, and where cheap food in the shape of various kinds of offal can be procured. A want of knowledge how to seize upon all the advantages that may offer, or to avoid all the difficulties presented, will be fatal to success. Upon the character of the ground will depend greatly the kind of buildings needed. A building suitable for a flock of poultry kept for business and profit, where the available ground is of small extent, is shown in our illustration. The building of which this is a sketch is in the center of a plot of land of less than two acres, which is divided into two portions, one being in grass and the other cultivated with fodder corn, rye, potatoes, or other crops. The house has two entrances, front and rear, so that the fowls may be turned into either part of the plot. It consists of a central building, with a wing upon each side. It is built of boards, and covered with Johns' asbestos roofing, which has the effect of discouraging the presence of lice by its strong tarry odor. The central apartment has three roosting poles on each side of the middle passage. From this apartment there are holes leading to rows of nests in the side apartments. These are appropriated for sitting hens, and for a room for packing eggs and a hospital for sick fowls, which are separated from the others until they are cured. When a hen is found sitting at night, she is shut off from the central apartment, and the nest opened to the side one. Above the central part of the building is a loft for keeping pigeons. The crops raised are for food or shelter for the chickens, and to encourage the presence of insects, upon which the young chicks may feed. Sheltered by the rows of corn-stalks, or the stalks of rye or potatoes, the chicks

Fig. 1.—POULTRY HOUSE FOR RAISING CHICKENS FOR MARKET.

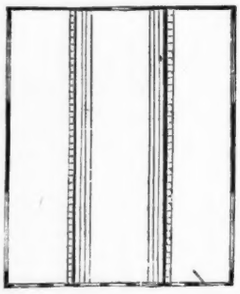


Fig. 2.—INTERIOR OF POULTRY HOUSE.

Fig. 1.—CATCHING A SHEEP.

are safe from hawks, which will not swoop down upon them, except in clear ground. The coops are kept in this part of the plot, being moved daily to fresh ground. The chickens are kept busy scratching in the loose ground, and there are few potatoes raised but what are scratched out and eaten by them. This furnishes them with employment and with some wholesome food, and it is for this purpose alone they are planted. The owner of this small chicken farm is a gardener and florist, and his wife manages this part of the business, producing every year two or three hundred pairs of chickens for market, besides eggs and old fowls.

## How to Catch a Sheep.

A sheep should never be caught by the wool upon its back or sides. No other farm animal has so tender a skin as a sheep, and when it is roughly

Fig. 2.—CATCHING A SHEEP.

handled or pulled about by the wool, the skin is bruised and the wool which grows upon the part is injured. The proper implement is the crook, one of which should be kept with every flock. It is a light staff, eight or nine feet long, furnished at one end with a steel hook, shaped as shown in the illustration (see fig. 3). To use the crook, the handle is taken in the right hand and the hook is quietly put amongst the sheep, and beneath the belly of the sheep to be caught. The round knob prevents the hook from being caught by the wool or injuring the sheep. The form of the hook causes it to turn in a flat position as soon as it touches the sheep's belly. When it is drawn backwards, it slides down the hind leg until it reaches the thin part of the leg above the hock, which is caught in the neck of the hook. If the sheep struggles and bounds forward, the leg slips past the neck of the hook, which acts as a spring and gives way, permitting the leg to slip through to the head of the crook. The sheep is then caught "by hook or by crook," and cannot escape. The shepherd holds the animal while he gets to its head, when he can secure it by putting his hand beneath its chin or breast. The sheep will not struggle when thus held. When there is no crook, the proper way to catch a sheep is, to take it by the hind leg above the hock, as in fig. 1, (on the preceding page), and then hold the sheep until the other arm can be passed beneath the throat or in front of the breast, as in fig. 2. If the sheep is to be lifted, this can be done by seizing the left hind leg and passing along the animals right side, putting the arm around its breast. When thus held, a sudden lift will hoist a sheep into a cart or wagon, unless it is a very heavy one, when it should be made to walk up a plank, assisted to do it if necessary.

Fig. 3.—CROOK.

## A Shed or Barrack for Straw.

The interesting and instructive articles by Professor Atwater upon feeding stock, which have been published in the *Agriculturist* for some months past, ought to give such a clear idea of the value of straw for feeding purposes, as to induce farmers to save it carefully and use it economically. If a good farmer should have ten or twenty tons of hay, he would have no other thought than to feed it to stock, so as to have its value returned, and at the same time to make manure for replenishing the fertility of the farm. But straw is not so regarded, and it is made to serve the purpose of a waste material by being thrown under the cattle. Now, if a ton of straw, which is considered worthless, can be made equal in feeding value to a ton of hay by the expenditure of four dollars worth of linseed or cotton-seed cake meal, corn meal, or bran, it is certainly a great saving and economy to feed it to cattle instead of treading it under foot. Leaves, dry earth, sand, swamp muck, and other substances, worthless for feed, can be procured for bedding in any quantity, and the straw saved for feeding. As the season for thrashing the grain is now at hand, we would urge the greatest economy in saving and using straw, so that none of its value may be lost.

As it is not often that it can be put into the barn directly from the thrashing machine for want of room, some means of preserving it from the weather must be provided. To stack it so as to keep it dry and in good condition, is more costly than to provide a roof under which to stack it. The cost of a roof like that in the engraving, figure 1, will be about $25 to $30, and it will hold 10 tons of straw. This small cost will be returned in one season in the saving of straw. To thatch a stack of the same size, so as to preserve the straw equally or nearly as well, would cost $5, if the necessary skill were at hand to make a good job, which is very unusual. The materials required are as follows: 4 posts 8×8, 24 ft. long, 512 ft.; 4 pieces 2×8, 20 ft. long, 80 ft.; 4 pieces 2×8, 24 ft. long, 14 ft.; 4 rafters 2×4, 16 ft. long, 43 ft.; 8 other rafters 2×4, 64 ft.; 600 feet half-inch boards for the roof; in all about 1,300 feet of lumber. It is built as follows: The posts are set firmly in the ground, 19 feet 6 inches apart each way, so as to form a square. Holes are previously bored in the posts with an inch and a quarter auger, 8 inches apart, beginning 10 feet from the ground. Four pieces of 2×8, 20 feet long, are then fitted together outside of the posts—but kept loose from them by iron straps around

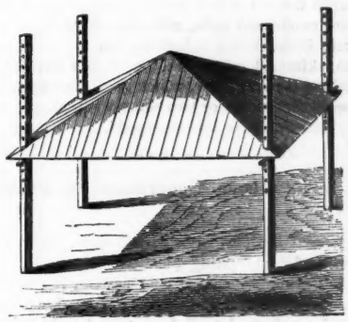


Fig. 1.—STRAW-SHED OR BARRACK.

the corners. The straps are bolted on with carriage bolts. Pieces of a cast off wagon tire will make excellent straps. Corner-pieces of 2×8 and 2½ feet long are then fitted and bolted, and screwed up tightly. This is the foundation or frame-work for the roof, and is shown in figure 2. Four rafters of 2×4, 16 feet long, are then fastened to the corner-pieces, meeting at the center where they are fitted and joined together. Eight other rafters are fastened to the framework, two in each triangular space, to strengthen the roof and for the roof boards to be nailed to. Well-seasoned half-inch siding boards, having the edges rabbeted so that one overlaps the other for half an inch, are then laid horizontally, commencing at the bottom, and nailed with shingle nails. The roof is then finished. Eight pins of one-inch round bar-iron, 18 inches long, are then procured, two for each corner, and a lever 6 or 7 feet long. The roof is raised one corner at a time by resting the lever on one pin, and when it is raised to the next hole, the second pin is placed in it to hold it there. As the straw is stacked, the roof is raised, and as the straw is used it may be lowered. The stack may be built two feet larger than the roof each way, if the straw at

Fig. 2.—FOUNDATION OF ROOF.

the outside is carefully laid to slope downwards, and is raked off before the roof is let down upon it. If a horse-fork is used, a hook should be fastened to the peak of the roof before it is raised to its place. One of these stack covers built at the corner of four fields, so as to answer for each, would be very valuable for stacking hay, corn fodder, or grain, and save much expense in barn-room.

## Animal Pokes.

BY L. D. SNOOK, YATES CO., N. Y.

Breachiness or the unruly proclivities of horses, cattle, and sheep, are supposed by some to be hereditary. Whether this be so or not, animal pokes and fetters of various kinds are frequently necessary and are extensively used. The cheapest plan of retaining the ordinary jumping animals is to keep a good fence with sufficient food for sustenance; as this cannot always be done, the alternative is to put pokes on them. In fig. 1 is shown the simplest and cheapest, but one of the best. An iron bolt should project from the long part near the end for at least two inches. This catches upon the fence as the animals jump over it, and often throws them, so that they do not care to repeat the trespass. Fig. 2 represents a poke with both sides of equal length and weight, hanging more evenly upon the neck, and with two iron bolts. Fig. 3 represents one with a bow, through which pass two iron bolts ten inches long. The lower one passes through a projecting piece three and one half feet in length, the upper edge of which rests against the upper bolt in such a manner that the piece projects downward at an angle of about 45°. This arrangement has proved to be a very serviceable one. While the projecting piece admits of easy feeding, it prevents approaching too near the fence, and, unless the wearers acquire the

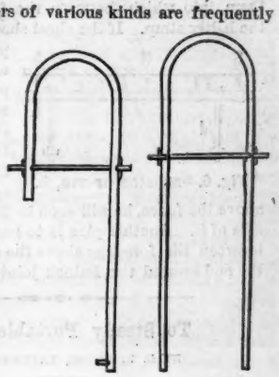


Fig. 1. POKES. Fig. 2.

Fig. 3.—POKE.

knack of throwing the end over the fence, they will always be found in the field where placed. In fig. 4 is shown a heavy, yet serviceable contrivance. It consists of a block of wood (*P*) one foot in length, 3×4 inches square, with holes bored for the bow ends; also one obliquely for the stick, which is stationary. With holes bored at right angles with the bow, it makes an excellent poke for breachy cattle. At fig. 5 is seen one form of a costly poke, but it is perhaps the most effective one of all that are here shown. It is shown in perspective in fig. 5, with a section at fig. 6. The part *R* is made of hard wood, fourteen inches long, three quarters of an inch thick, and 2½ inches wide. In the center of this are firmly driven six wrought-iron nails, the points of which are filed sharp and project into corresponding holes made in a stick of the same size, shown at *L*. This is kept from separating by two short bolts, *S, S;* the spiral springs shown keep the posts, *R* and *L*, equidistant from each other. The whole is bolted to the bow by bolts, *M*, one of which must be unscrewed to remove the poke or place it upon the animal. As the lower ends of the poke press against the fence, it forces the pointed nails through the stick, *R*, into the neck or chest of the animal.—It is best to avoid the use of fetters or hopples if possible, as they not only strain a horse, but girdle the fetlock. Some farmers tie their horses down, that is, place a surcingle around them, into which, between the fore-legs, they tie the halter-strap. If the chest should become sore, place the strap upon the outside of the fore-leg, remembering that they should be tied quite short, for if a jumper can raise his head above the fence, he will soon be found on the other side of it. Another plan is to pass the halter-strap between the fore-legs above the surcingle, and tie the end around the fetlock joint of the hind leg.

Fig. 4.—POKE.

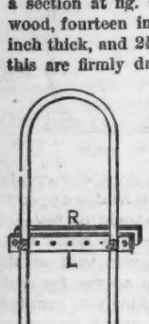


Fig. 5.—POKE.

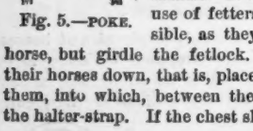


Fig. 6.—SECTION OF FIG. 5.

## To Steady Portable Mills.

BY L. D. SNOOK, YATES CO., N. Y.

The continued jar and vibratory motion of portable machines, such as mills, fanning mills, presses, and others, while in use, keeps them continually creeping, (so to speak,) from the position in which they were originally placed, and where it is desirable they should remain. This is especially true of the fanning mill, in such general use on the farm; many are so annoyed at its instability that they nail it to the floor. This very inconvenient method, when the mill has to be removed and again secured at each successive using, will, after a fashion, accomplish the object, but there is a better, neater, and more economical plan, which is here illustrated. In figure 1 is shown a square-headed spike, which is driven into the bottom of the leg, standard, or support, as far as the shoulder; the head is then filed to a point, as indicated by the dotted lines. The forms in figs. 2 and 3 are made by the blacksmith of the shapes shown, and inserted as before noticed, care being used not to break or bend them during the operation. The idea shown in fig. 4 is to cover the entire bottom of the standard with a thin plate of iron, with the edges turned up and notched with a file, and the whole secured by screws or nails as shown. A cheap way is to saw in the bottom of the standard, and in this cavity insert a bit of band or hoop iron, which should be driven firmly in place, the projecting edge is then filed sharp as indicated in fig. 5. Nails may also be driven partially in, and the head then filed sharp.

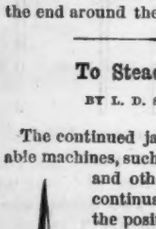


Fig. 1.

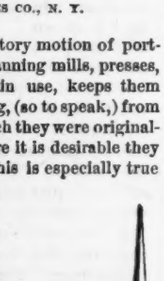


Fig. 2.

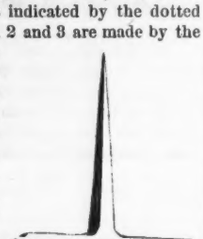


Fig. 3.

Fig. 4.

Fig. 5.

Washing machines, benches, etc., should have a small piece of india rubber attached to their floor surface by a screw; bits of the soles of rubber boots or shoes will answer the purpose, and are always at hand.

A USE FOR SKIM-MILK.—As the use of skim-milk for the manufacturing of cheese is very unprofitable, we would suggest that it be condensed for use in the cities, where an extensive demand for it would undoubtedly spring up. The skimmed milk of a farm or creamery, is vastly better than the milk produced at those so-called "dairies" of the towns and cities, where distillery slop is the food of the cows. It is pure, wholesome, and agreeable, and for cooking purposes, and for children's food, would be very acceptable. It could be afforded at a somewhat less price than the pure condensed milk, and if honestly sold for what it is, and labelled "Condensed Skimmed Milk," it would not enter into unfair competition with the pure condensed milk, although it might in many cases be used as a substitute for it. Any use of the skimmed milk would be better than that of making it into cheese, which goes "a begging" in the market at one or two cents a pound, and bringing decent cheese into disrepute.

## Spontaneous Generation of Plants.

A contributor to one of the daily papers asks a series of "interesting questions."

1st. Some 10 acres of land had for 75 years been submerged by a mill-dam, the pond had in that time filled up from 4 to 6 feet, with brook sediment, which, after the owner had drained and reclaimed it, was so soft that it was mid-summer before a man could go over it to sow some grass-seed. Now, "There appeared upon it, late in the season, an immense growth of a strange grass, overtopping the plants that came from the seed he sowed, and became so dense and long that he supposed it would smother out his plants. He had the strange grass cut and made into hay of little value. This new comer, that sprung out of the pond mud—not in sparse plants, but in a dense mass—Prof. Prentiss of Cornell University calls rice-cut grass. Then he asks a pertinent question, which I want your learned and experienced contributors to satisfactorily answer: 'Where did it come from?'

"Did it come from seed which had been washed down by the brook from above, and if so, did this seed lie and keep sound in that mud thus covered by water for generations, and germinate so luxuriantly as soon as the water was drawn off, and take the lead of pure, sound seed so recently sown by the writer?"

Well, if this conundrum were put to us, we should say that Rice-cut-grass was much more likely to flourish on such a mucky soil as that, than the meadow-grass which was sown. And as to where the seed came from, we should say it came down stream. No doubt there was plenty of this grass all along the banks of the stream, and in the pond when the water became shallow. The seed would keep its vitality in the soil for some years, perhaps for many years; but here there is no need to count on that. Probably the freshets of the fall and spring had seeded it with rice-grass.

2nd. "These strange things are continually happening. I am told that the old fields of Virginia, which have been cultivated for hundreds of years, when abandoned, as they frequently are, are almost certain to produce a crop of pitch pines, and no other kind of evergreens or trees. Do they come from seed?"

What's to hinder? Plenty of these pine trees not far off, from which every fall the wind carries the winged seeds, and sows them broadcast over the land.

3rd. "Again, when the dense forests of hemlock are cut off for lumber, and the annual fires run through and burn up the limbs and other refuse, the next season is sure to bring a dense crop of what is commonly called fire-weeds, and nothing else, to be succeeded the next year by an equally dense growth of blackberry vines. There had not been any fire-weeds or blackberry vines growing on this land for perhaps a thousand years before."

More likely raspberry than blackberry vines. But, anyhow, it is a very unusual piece of open hemlock woods, that has not plenty of fire-weed and blackberry or raspberry vines growing round, here and there, and when cleared off and burned over, the wind will do the sowing of the downy seeds of the fire-weeds, fast enough, and the birds will drop the seeds of the berries; and the freshly liberated potash in the ashes, which these plants particularly like, gives them the advantage over everything else at the start.

4th. "Again, I have seen quite a dense growth of hemlock spruce (*Abies Canadensis*) growing out of earth taken from the bottom of a shaft sunk for iron ore, perhaps 50 feet deep or more. Now, there had been no vegetation growing out of that earth for 20 centuries, and it may possibly be 20,000,000 of years."

Now is it not much more probable that these hemlock trees came from seed left on the freshly exposed soil by the winds, than from seeds buried in the ground for twenty centuries or twenty millions of years? But the propounder of these questions declines both alternatives, and says: "My opinion is that they did not come from seed, but that a certain condition of soil (or matter) and climate will produce a certain kind of plant, which opinion I may hereafter more fully elaborate, if not convinced to the contrary." And he falls back upon Prof. Tyndall, as probably "correct in the formula recently advanced by him, that 'matter contains within itself the power and the potency of all life.'"

Now we question whether all the "potency" Prof. Tyndall can muster, ever led him to expect rice-grass from muck, blackberries from ashes, and hemlock trees from gravel. Finally, while the ingenious correspondent is more fully elaborating his opinion, he might take up one question more, which has some bearing upon it. A clergyman of our acquaintance, reading from his pulpit the noble discourse on Charity, how that "it hopeth all things," and "endureth all things," added, "nevertheless, Charity is not a fool." So, also, we may suggest, Nature is not a fool. She does not do utterly superfluous things. Having provided seeds in plenty, each producing after its kind, and plentiful means for their dissemination, she trusts to them. She keeps her "promise," and turns her "potency" to much better account, and reflects a higher wisdom than doing needless work.

Why should we take any notice of our newspaper philosopher? First, because there is some amusement to be had out of it. Secondly, because it is a specimen—somewhat more glaring than common—of the loose way in which questions of this kind are apt to be discussed.

GROWING CROPS WITH CHEMICAL FERTILIZERS.—The annual sale of crops from the farms of Mr. Prout and Mr. Middleditch, of England, have recently taken place. These farms are worked entirely without feeding any stock other than the working teams, and without barnyard or stable manure, only chemical fertilizers being used when thought necessary; the whole of the crops are sold, grain and straw together, to be cut and removed by the purchasers, at their own cost. Mr. Prout's crops, the twelfth in succession, realized $54 an acre, for wheat, (200 acres). 130 acres of barley brought over $45 an acre, forty acres of oats brought over $56 an acre, and the clover over $79 an acre. 427 acres sold for $23,154. Mr. Middleditch received about the same prices for his crops.

## Nursery Agents and Tree Peddlers.

BY TRUETT'S SONS & MORGAN.

We notice the remarks in your August number, concerning nursery agents and tree peddlers. We fully agree with you that "the purchaser should have some assurance, that the trees, when received, did really come from said nursery, and that the proprietors of that nursery are responsible for their being the trees ordered, and that when they left the nursery, they were correctly labelled."

You then ask, what provision is made to secure the purchaser in this respect.

*We* have a system which was adopted by us in the beginning of our business, and which we have elaborated, as the necessities of the business brought the points before us from time to time.

Taking in view, first: our own relation to the purchaser, and our responsibility to him, with a firm determination to do an honest, fair, and square business, that might be open to the world; then the stand-point of the purchaser, and the possible representation of an agent eager to swell his sales. Theorizing thus, we originated a system which we believe to be unique, and a "new departure," as concerning nursery proprietors.

You describe how the thing is managed at nurseries where *you* have been. How that Smith, the peddler, calling himself an agent, gets orders for trees from Jones' nursery. At the digging season he goes to Jones and buys certain blocks or odd rows of trees; he has his own men to dig them, he takes them to some vacant place, and labels them as may be, packs them in lots to suit his orders, and all that Jones has to do with the matter, is the trees grew on his ground and he sold them.

Now our plan is this. No man acts as agent for the Rosebank Nurseries, without our printed form of orders, and our uniform series of plate-books. We allow no man to fill a part of his orders with us, and another part of his orders with somebody else; we fill all and every part of his orders or none. We sell no stock in bulk; that is, we sell no "certain blocks or odd rows of trees" to anybody. We have articles of agreement with every agent representing our nurseries, in which it is stipulated that he shall sell by our catalogue list, our order books and plate-books; no other variety or specialty of fruit, to be sold under any circumstances without our permission. The agent in addition, binds himself to send us his order books as fast as filled. Now in order to see if any eager salesman has exceeded his authority, or been too enthusiastic in his representations to the purchaser, we take the order books as fast as they come in from the beginning of the season, and dissect them piecemeal. In this way. We have a set of printed abstract sheets or blanks, uniform with the order-book, and upon these abstracts or blanks we tally every item that every order calls for; the number, the variety, the size, and description of everything sold, is noted. Our blanks for the season's work, become as voluminous as those of a quartermaster in an active compaign, and it takes the entire time of one first class man to attend to these abstracts.

From the start, then, we know whether our agents are running us too heavily on any particular variety of stock, and we are enabled by a prompt notification to the men at work taking orders, to regulate the sale of varieties, completely and absolutely. Care being taken first, to catalogue nothing but the best, the agent will not go astray in selling anything in his forms.

In this dissecting of orders, and the tallying of each variety, we arrive at a perfect knowledge of what the agent is doing, the representations or promises he makes, and any irregularity is promptly discovered and corrected, if per chance an agent new to the business blunders into an error. After the orders have been tallied, and every item "varietized" upon our abstract sheets, they are then "written up;" that is, all the labels and address tags are written by one of our own clerks, in our own office. The labels and an address tag for each order, are then twisted togther into a bunch, and strung upon a wire, each delivery by itself, ready for the packing shed, in the fall. The orders, or bundles of orders, as contained in the different bunches of labels, are then taken by our own men, and packed under the sepervision of one of the proprietors. Our variety schedule or abstract sheet is closely watched and kept posted up, and at the end of the season, serves as a digging list, by which our stock may be placed in the trenches. The digging and placing of stock in trenches, is also done by our own men, under the supervision of another one of the proprietors. There are no agents about our grounds while packing is going on. They are not forbidden, but they prefer to stay in the canvassing field, until just before delivery time, then come to the nursery office, to stay perhaps a half a day, then return to their points of delivery to collect their pay from a satisfied set of customers.

THE ENGLISH LABORERS' UNION.—As might have been expected, the organization known as the English Laborers' Union, has been split into two parties, one headed by Joseph Arch, and one by Mr. Vincent, the editor of the Laborers' Chronicle, who claims to have been the author of all the letters and publications that have been issued, bearing the name of Mr. Arch. The rock upon which the Union split, was a dispute about the lavishness of the expenditure. The necessity for reform in the condition of the English agricultural laborers, however, is too absolute to permit the purpose for which the Union was formed to fail, and if it temporarily suffers from the incompetence or unworthiness of its leadears, it will purge itself of them and begin afresh.

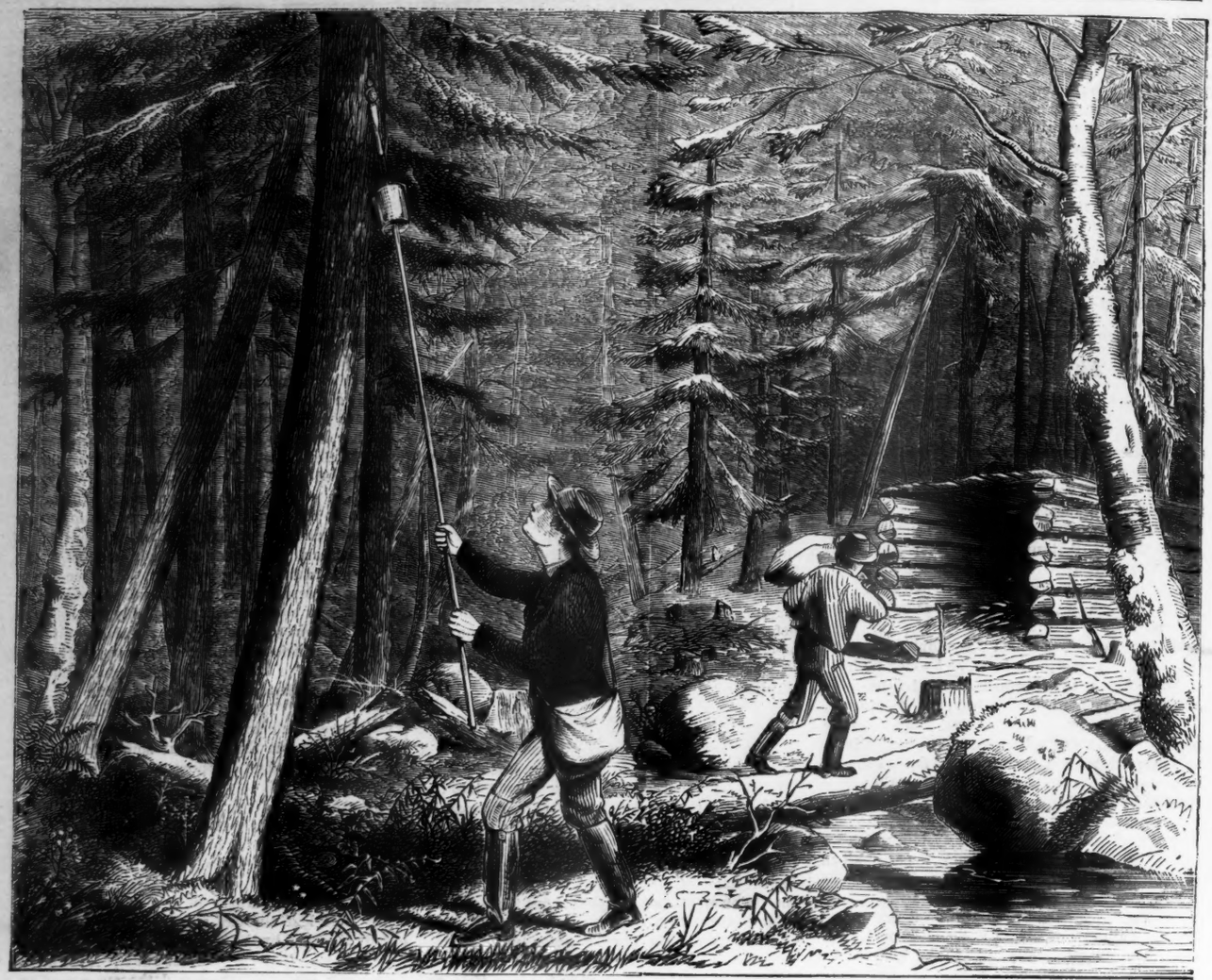
CURING CORN-FODDER.—A method of curing partly dried corn-fodder, is to cut it with a fodder cutter into chaff, and mix it with straw cut in the same manner, then pack it away in a mow, trampling it down closely. A little salt is scattered amongst the layers as they are packed in. When thus put up, fermentation takes place and a gentle heat is produced, which improves the straw, making the whole even and equal in flavor, so that it is readily eaten by cattle or horses. Those who have the material, the leisure, and a horse-power straw cutter, might usefully prepare a quantity of fodder in this way as an experiment.

## The Eucalyptus in California.

BY ONE OF OUR STAFF ON HIS TRAVELS.

The genus Eucalyptus is a very large one, as it includes about 150 species of mostly Australian trees, which are broad-leaved evergreens, some of which exceed in size even the "big trees" of California. Several of these were introduced into California a few years ago, and one of them, *E. globulus*, the blue-gum, is so much more esteemed than the others, that when *Eucalyptus* is named, it is there understood that this is the species referred to. It is already widely disseminated in that state, and forms a striking feature in the landscape around San Francisco Bay. It grows with great rapidity, making a tree ten to fifteen feet high the third year from planting. It grows readily both from the seed and from cuttings, and all the nurseries that we visited in suburban districts and in the country had large plantations of Eucalyptus. The leaves upon young trees have a peculiar bluish-green tint, which changes to a darker green as the tree grows older. It is planted in almost every conceivable position where trees are allowable. It is an admirable tree for the side-walk, and for the lawn in suburban districts and in country villages, having a clean trunk and leaves, and forming a deep shade. It grows in compact masses and makes a good wind-break in three or four years. It makes wood rapidly, and is planted both for fuel and timber. It is remarkably tenacious of life, and when well started at the beginning of the rainy season, few plants fail even in exposed and unpromising localities. We saw all along the Piedmont district, east of Oakland, avenues planted with this tree, and hardly a gap in the long rows. The people begin to have faith that all that treeless region east of the bay, even to the top of the mountain range, may be clothed with forest. In visiting the site of the old red-wood forest that overlooks the bay, we noticed a plantation of Eucalyptus upon the ranch of Mr. Low. It was well up the mountain, upon a steep acclivity, and in a spot as unpromising as any that could have been selected. Almost every plant was in flourishing condition. The tree seems to be a success everywhere. Its sudden popularity is owing in some measure, probably, to its supposed influence in absorbing the malaria of fever-and-ague districts. Numerous accounts are published, showing an improvement in the health of people in malarious districts, where the tree has been planted. Dr. N. P. Gibson, of Alameda, a very careful observer, attributes this not to any peculiar value in the tree, but simply to its more rapid growth and greater power of absorbing water. He says: "In eight years the Eucalyptus will attain a diameter of eighteen inches, and a hight of fifty feet. Experiments which I have made determine these facts. A branch of this tree, which contains 105 square inches of leaf surface, will absorb 3.25 ounces of water in eighteen hours. The entire tree will furnish an area of 310,500 square inches of leaf surface, and the amount of water daily absorbed by the roots would equal 609 lbs. or 76 gallons. Given a stagnant swamp of 200 acres, each acre having 200 trees, and the amount of water daily absorbed by the roots would be 3,040,000 gallons, or 405,333 cubic feet. This would be equal to a constant stream of water, running at the rate of three miles per hour, of two feet wide and six inches deep."—The rapid growth of the tree is not overestimated. Under favorable circumstances a tree has been known to grow twenty feet in a year, and to attain the hight of seventy-five feet in eight years. Whether it be true or false, the belief in the ameliorating influence of the tree upon the climate in malarious districts is general, and the planting goes on with enthusiasm. It is doing much to change the landscape and to redeem the California summer from its sere and desolate aspect. It is good to turn from the boundless seas of wheat and oat stubble to the long evergreen rows of the Eucalyptus. Planters in the eastern states can hope little from the Eucalyptus; we gave last March an account of the unfavorable results with the different species of Eucalyptus as far south as Georgia, and we shall be glad to know how it has done with others.

THE USE OF DYNAMITE IN CLEARING LAND.—The value of this explosive in agricultural operations, has been favorably shown in a recent clearing of a tract of land in Ireland. The land was so covered with boulders, as to be useless on account of the cost of removing them, until dynamite was tried. Charges of two ounces in a six-inch hole shattered immense sunken boulders, so that they could be removed with ease, and the pieces used in building walls, without dressing. Loose boulders were broken up by placing charges of dynamite upon them and covering these with other boulders. The explosion broke both the boulders into fragments fit for building stone.



GATHERING THE "GUM" OF THE HEMLOCK SPRUCE.—*Drawn and Engraved for the American Agriculturist.*

## Hemlock or Spruce "Gum."

Under the incorrect name of Hemlock or Spruce Gum, considerable quantities of an exudation from the Hemlock, or Hemlock Spruce, (*Abies Canadensis*), are annually sold. We say incorrect name, as the article is in no sense a gum, but is properly a turpentine, consisting of resin and a small proportion of volatile oil. It is similar in its nature to the white turpentine which exudes from the southern pine, but having less oil, is much harder. It is also called Canada Pitch. The Hemlock is well known as one of the most beautiful of our native evergreens; it is abundant along our northern borders, and especially so in Canada; its lumber, though of a coarse kind, is largely consumed for various purposes. The Hemlock while growing contains very little resinous juice, and the lumber is very free from it, but when the tree from any cause begins to decay, the turpentine or "gum" appears upon the surface in nodules, some of which are the size of a walnut or smaller, while others are as large as a hen's-egg. It is a very common thing among young persons who live where the hemlock abounds, to get into the habit of gum chewing; the orientals use mastic for strengthening the gums and perfuming the breath, and it is possible the use of chewing-gum originated in some such notion. The chewing-gum of a few years ago was this turpentine of the hemlock, or spruce gum, refined, but this has latterly been superseded by paraffine, which is a white wax-like product of petroleum or coal-oil. The resinous product yielded by the Norway Spruce in its native forests, is known in this country as Burgundy pitch, and is much used for making a stimulating plaster; the Hemlock pitch is also used for the same purpose, and very closely resembles the imported article in its effects. In one way and another the article finds a sale at prices which make it worth while for those who live near hemlock forests to collect the "gum," as it is always called by the country people. The artist who furnishes the drawing illustrating the method of collecting the material, sends the following notes: "Early in the fall or late in summer after the haying is over, some of the farmers go "a gumming," as it is called; they go to the woods, where they erect a log shanty, and proceed to collect the gum for the market. A long pole is provided, below the tip of which is fastened a circular box or receptacle, generally the leg of a boot, kept in shape by a circular piece of wood through which the end of the pole projects; on the end of the pole is fastened a chisel. Having a satchel slung over his shoulder, the collector proceeds in search of gum-bearing trees, and when found, uses the implement in the manner shown in the engraving. The gum detached by the chisel falls into the box beneath, and from this, it is transferred from time to time to the satchel or haversack. These receptacles are emptied into a large bag, and when this is full it is taken to the log hut. During rainy days, evenings, and at odd times, the gum is freed from twigs, bits of bark, and other impurities, and made ready for market. The collecting of gum is sometimes very profitable; in some cases over $2,000 having been realized by two men in a single season, but such returns are exceptional. The season lasts until the weather becomes too cold to work in, when the camp is broken up."

## The Shrubby Cinque-foil.

The Cinque-foils, or Five-fingers, as the species of Potentilla are called, are some of them quite common, while others are more local; some are low herbs, one looking much like a starved strawberry vine, while a few are shrubby. The one here figured is known as the Shrubby Cinque-foil, *Potentilla fruticosa;* it has woody stems from two to four feet high, and very much branched so as to make a dense bush; the pinnate leaves have five to seven leaflets, which are oblong-lanceolate, entire and furnished, especially on the under side, with silky hairs. The flowers, which are large for the genus, are at the ends of the small branches, are numerous, and continue to be produced all summer. This is a widely disseminated spe-

cies, growing from Newfoundland to the Rocky Mountains, and is very common in wet grounds in all the northern states. A well formed specimen is quite as handsome as many shrubs which find a place in the garden. The chief interest attaching to the plant is that it is in some localities disposed to become a weed.

SHRUBBY CINQUE-FOIL.—(*Potentilla fruticosa.*)

Last year "Hardhack" was mentioned as troublesome in New England, which we thought rather strange, but when it was said to have yellow flowers, it was evident that the true Hardhack was not the plant in question, as that has dense spikes of pretty rose-colored flowers. At last some of the troublesome "Hardhack" was sent to Dr. Vasey, at the Department of Agriculture, who at once saw that it was the Shrubby Cinque-foil, the plant here figured. It appears that the plant spreads very rapidly in moist land, and unless checked, will take complete possession of a pasture, and soon render it worthless by choking out and starving the grass. It has been especially destructive in some parts of Connecticut. Weeds of this character—those with perennial roots—are very difficult to eradicate when once they have possession, hence it is important that they be checked on their first appearance. Much of the trouble with weeds arises from the fact that cultivators do not know their most dangerous enemies when they see them, and we have known a comparatively innocent plant to be regarded as mischievous, while the real intruder was growing unmolested. Hence, in publishing the portrait of a weed, we do the readers of the *American Agriculturist* even a better service than we do in illustrating plants worthy of cultivation. It is well to repeat here what has been often said before, that mowing or otherwise cutting off the tops will, *if persisted in*, finally subdue the most obstinate of weeds, and that there is no specific, no application other than hard work, which will get rid of them. We presume that the calling of this plant "Hardhack," must be very local, and we hope it may not reach beyond its present limits. The present is an illustration of the importance of accuracy and uniformity in the common names of plants, and we hope that the officers of the State Board of Agriculture in Connecticut, who sent the plant to Washington as Hardhack, will do what may be in their power to correct this misapplication of a well-known name, and insist upon its being called by its proper name, *Shrubby Cinque-foil.*

BLUE STOKESIA.—(*Stokesia cyanus.*)

## The Blue Stokesia.

In our attempts to popularize our native plants, and to introduce them into gardens, we have generally called attention to those which were comparatively common and readily procured. This time we describe one of the most beautiful, as well as one of the rarest plants in the country, *Stokesia cyanus*, the Blue Stokesia. We endeavor to preserve uniformity in the common names of plants, and when a name is well established, do not often alter it, however inappropriate it may be. Mr. Robinson in his hardy flowers calls the plant "Stokes' Aster," a name that we do not think it desirable to perpetuate, as it is very far from being an Aster in its botanical characters, though it has something the aspect of a China-Aster, which is not an Aster at all. Sutherland in his work on Hardy Herbaceous Plants, calls it "Blue Stokesia," a name which seems preferable to the other. "But why go to English authorities for the names of American plants?"—some very patriotic individual may inquire. Because the English have enterprise enough to send over here and get our good things and cultivate them and make them known to the rest of the world. Priority of publication establishes a name in horticulture and in botany unless there are very good reasons for setting it aside; Robinson's and Sutherland's works were both published the same year, and we are not troubled by the question of priority, but select which of the two seems preferable. So much for the name, which by the way we may say was, so far as the generic name *Stokesia* goes, given in honor of Dr. Jonathan Stokes, an English botanist of the last century. The plant, as the engraving shows, belongs to the composite family, and is included in a small tribe of which the well-known "Iron-weed," (*Vernonia*), is the most common representative. It is a perennial herb with branching downy stems, growing from one to two feet high. The leaves are entire, the lower petioled and the upper sessile, and fringed at the base. The flowers at the ends of the branches are in large heads with something the appearance of those of a *Centaurea*, or Star-thistle, figured just a year ago, (Oct. 1874, p. 381); the heads have numerous leafy bracts at the base which are fringed with spines on the margin, as seen in the bud in the engraving; the head of flowers when well opened is three or four inches across, and made up of numerous florets, those on the margin

much larger than the others, and deeply split down, those towards the center smaller and tubular; the color is a deep sky blue on the margin of the head, lighter towards the center, where it is nearly white. The Stokesia is a native of the pine barrens of South Carolina, Georgia, and Louisiana, and is probably one of the rarest flowering plants in the country, as it is one of the handsomest. In England it is mentioned as "a choice plant," and as blooming in September and October, and in localities north of London it is advised to grow it as a pot plant, it being "well worth a place indoors or out." With us, near New York, the plant is perfectly hardy, and blooms in June and July, continuing to produce a succession of flowers for a long time, and is one of the most pleasing, hardy plants, native or exotic, we have in the garden. Here it is necessary to anticipate numerous inquiries and say "we do not know" to the many who ask where it can be had. We have but one plant, and cannot be tempted to divide it. Our seedsmen should arrange with their southern correspondents for seeds, and our florists can procure it, as they do many other native plants, from Europe.

## Why the Peaches did not Sell.

EDITOR AGRICULTURIST: Early in the peach season, when almost daily rains caused the fruit to decay rapidly, very fair peaches, for immediate use, were offered at 15 to 30 cents the basket or crate. Both dealers and growers complained that people did not take advantage of these prices and purchase freely. It may seem strange to these persons that hundreds of crates were left to rot on their hands, to be thrown away the next morning; this and the fact that fine fruit at very moderate prices has since been of slow sale, may open the eyes of the raisers and dealers to the fact that the fault is as much their's as that of the people. People want peaches, but the growers and sellers will not let them have them. The present method of putting up peaches for the most part keeps the consumer from buying. To make a personal matter of it, I have not seen a crate or basket of peaches this year, or any other year, that I would take home if given to me. I want peaches, and would be glad to have them every day during the season, but the grower puts them up in a shape that prevents me from having them. Nothing more unhandy to carry than a basket of peaches was ever devised—unless it be a crate of the same. There is nothing to take hold of either by, and if carried at all, must be toted on the shoulder, or lugged somehow with both hands. Sometimes a handle is extemporized by means of a cord, but then the weight is too much to carry a long distance in one hand. There is such a thing as working too hard for a luxury like peaches, and rather than make a common porter of one's self, hundreds who would gladly purchase the fruit, go without. In my own case it is a long distance from a dealer to the ferryboat, and another long stretch to reach the cars which take me home, and I had rather go without the fruit than tote it this distance. And the same is the case with the majority of my fellow passengers. "But why do you not buy a part of a basket?"—I sometimes do, and it works in this way: "How much for half a peck of those peaches?"—"Sixty cents."—"How much for the basket?"—"A dollar and a quarter."—As there are five half pecks, (or should be), in a basket, this is paying largely for a small quantity. I do not so much blame the retailer, for I have seen how with all his care in digging down for the half peck, he is obliged to put in some of the fine fruit the grower has carefully placed at the top, and the remainder does not look very tempting. A basket of peaches was sometime in the past, a bushel, it has been growing smaller, until custom and agreement among growers has established it at five half pecks. The reason the cheap peaches were not sold was on account of the inconvenient size and shape of the packages. Let some enterprising peach-grower devise some method of putting up, say a peck of peaches, in a package which one can carry a mile in one hand without inconvenience, and I am very sure that no fruit offered in that portable shape will be thrown into the dock; customers will gladly pay enough extra to cover the trouble and cost, though they do not care to pay a dollar, as is often charged, for the fourth of a dollar crate, put up in a light basket that costs 10 cents. Messieurs peach-growers, people in cities want your fruit, we in the country want your fruit, but we rarely buy it, because you insist that we must take five-eighths of a bushel, in a shape that is as difficult to handle as it is to carry two pumpkins under one arm. Give us good fruit in handy parcels, and we the people will willingly pay remunerative prices, NEW JERSEYMAN.

## Notes from the Pines.

It is only fair that those who have kindly inquired after the "man at The Pines," should be assured that he is there yet. When I began to write under the above heading, I did not intend to offer a regular series of papers. It is an open secret that the managing editor writes from The Pines, when he cares to give bits of personal experience in a more colloquial form than is allowable in an editorial. Brother Harris had a little rather set forth his failures than his successes, and it seems to me that he is never so happy as when the crops fail, the little pigs die, and everything seems going "to the bow-wows," though it must be said to his credit, that he draws useful lessons from his mishaps. Had I written last spring, it would have been to chronicle the havoc of the past winter, and as there was no useful lesson to be drawn from it, I preferred to keep quiet. When the destruction is so general, all that it teaches us is, that things before considered hardy, are really not hardy in such a winter as the last. Thrifty young apple-trees of well tested sorts, were killed root and branch; blackberries and raspberries of all sorts badly injured; grape-vines five years old either killed outright or sadly mutilated, and so on through the catalogue. If I cultivated these things as a business, I should feel as blue as one of my friends does; he is a nurseryman, and says it will take him three years to get his stock up to where it was last fall. Much of the destruction in the past few winters, has been ascribed, and apparently with truth, to the dryness of the soil.

THIS SUMMER'S RAINS must have gone far towards supplying the deficiency. Such continued moist weather as we had in July and August, has been most favorable to mildew, and the grapes look badly in spite of sulphur, which does but little good save when applied in hot dry weather.... The melon crop was badly injured by the rains; the vines so long without sun, were in an unnaturally succulent condition, and when hot and clear days came, the leaves curled and shriveled.

POTATO BUGS of course we have had. They were expected and watched for, and a persistent hand-picking kept them in proper subjection; there was little difficulty in keeping them from the early sorts, and very few larvæ came to perfection on the place. But in August the later broods began to fly, and they came in hordes from elsewhere. One might go through the patch and sweep the vines clean, catching them in the affair figured in August on page 294, and after finishing, begin again and get about as many as at first, so rapidly did they come in. It was useless to try to catch all the bugs that the surrounding country could supply, and we applied Paris green. The love of the Doryphora for the potato, is nothing to that of its passion for the egg plant. It seems almost a pity to pick the beetles from the egg plant, they seem so happy. Why don't some one patent the plan of setting out egg plants among the potato vines, to keep the bugs from them? Quite as practical things are patented. In their flight the bugs made their way all over the place, they were on the paths, in sheds and out-buildings, and a nuisance generally. They quite took the tops out of some ornamental *Solanums* in the flower garden, and made a vigorous attack on *Datura meteloides*.

TRIUMPH AND EXCELSIOR are the lofty names of the varieties of Sweet Corn upon which we have been luxuriating. The "Triumph," originated by D. C. Voorhes, Blawenburg, N. J., and distributed by B. K. Bliss & Sons, was mentioned last year. "Excelsior," which was brought out this season by Washburn & Co., Boston, is the result of years of careful selection and improvement, by Thos. G. Potter, the well known seed-grower of Rhode Island, where they know what sweet corn is. When we had Triumph on the table, that was voted the best, and on the days when Excelsior was before us, *that* was the best; then came days when we had both together, and we were confident of a final decision. One eating an ear of Triumph was sure that nothing could be better, until he had eaten an ear of Excelsior; that was rather the best, but it was only fair to take another ear of Triumph in order to be sure; then that would be adjudged better than the other, and Excelsior must have another chance, and so on. We have arrived at the conclusion that the capacity of the human stomach is not sufficient to allow a fair decision to be reached, as to the relative merits of these two varieties. Either of them is good enough for any living mortal. The Triumph has a longer ear, but the rows upon the Excelsior are closer, and we think that it remains longer in the tender state, proper for eating; both varieties are abundantly productive and superlatively good.

THE FLOWER GARDEN has suffered from the copious rains. Two beds of ornamental planting are all I have time for. One was planted in concentric lines of "foliage plants," the outer one being *Centaurea gymnocarpa*, which now presents a sorry sight, at least half the plants having decayed. Another bed, which I regarded as very effective, is a good sized circle, margined with two lines of *Echeveria secunda glauca;* within are nice, thrifty, medium-sized agaves, aloes, and similar plants, and among them was planted an abundance of *Othonna sedifolia*—introduced a few years ago under the incorrect name of *O. crassifolia*—which made a dense charming green carpet, against which the other plants were seen with fine effect. I have but little fancy for garden embroidery, and the working out of stiff patterns with plants instead of colored worsted, but here was something worth looking at, and it received a tribute of admiration in a daily morning and evening visit. The rains came, and dampness prevailed, and the fleshy *Othonna*, which rejoices in a prolonged baking, was a succumbed succulent, and the bed in which I took so much pleasure, now looks like a parlor at house-cleaning time—the furniture is there, but the carpet is up. A short spell of dry weather will bring it all right again, as the stems of the *Othonna* are still alive. Let me in passing say another word for this *Othonna*, which is now to be had of all the florists; it is one of the most useful plants for a hanging-basket that I know of, and grows admirably in a dry room. For engraving and description, see *Agriculturist* for December, 1873, page 459. The most showy thing in the garden, is

A BED OF CANNAS,—Cannas which are Cannas, and it came about in this way. Mr. George Such, of South Amboy, N. J., asked in the spring if I would try a set of his new Cannas; of course I am always ready to try any new thing, and accepted them. My former experience with new Cannas had not shown them to be superior to the older sorts, and I hesitated about giving these new comers the post of honor; however, in deference to Mr. Such, the new comers had the bed on the lawn, and the old ones placed in the back-ground. That bed is now just splendid; we had reached quite as perfect foliage before, but these, while they are equal to the older kinds in the luxuriance and color of their leaves, flower with an abundance and brilliancy of which I did not suppose the Canna capable. "Prince Imperial," "Gloire de Lyons," and others are intense in their scarlet and crimson, and there are fine orange and salmon colored ones; "Impe-

rator," fortunately placed in the center of the bed is now some eight feet high, and increases daily. The bed stands in full view from my place at the table, and while enjoying the good gifts there set forth, I can marvel at the prophetic vision of Shakespeare, who propounded the conundrum:

"Can such things be,
And overcome us like a summer's cloud,
Without our special wonder?"

I reply decidedly not, for these "*Such* things" are not "without our special wonder" which is daily excited by their great beauty.

AMARANTHUS MELANCHOLICUS RUBER is a melancholily long name for a bright-leaved variety of the old "Love-lies-bleeding," (which, though English, is agonizing.) When left to itself it is one of the most brilliant of plants, but it must not be cut, as I have found to my cost, in trying to make it grow low. A check given to any of the Amaranths by being too long in pots, too dry, or by cutting back, throws them into seed-bearing at once, and they soon exhaust themselves....Can we popularize good things that are not generally known by frequent mention? Now, there is

KOELREUTERIA PANICULATA, a tree which has every element of popularity except its name. If one wishes a medium-sized tree, 15 to 25 feet, for a small place, one which shall be satisfactory in every respect, and unlike the trees which everybody else plants, what can be better than *Koelreuteria?*—It has every good quality of the Ailanthus without its faults; it is a shapely tree, eminently clean and free from insects; it has very dark green shining foliage, cut in a pleasing manner; it produces in July a profusion of spikes of bright yellow flowers; these are followed by a copious crop of large bladdery pods, which as autumn approaches, becomes handsomely tinged with red, and almost as showy at a distance as flowers. But the name! I have not much sympathy with this dislike to botanical names, but it exists, and if the name is an obstacle to making a meritorious tree better known, it must be bettered. *Koelreuteria* is closely related to our own beautiful Bladder-Nut, *Staphylea*. Then let us call this

THE CHINESE BLADDER-NUT, and ask the nurserymen to adopt the name in their catalogues. It grows readily from the seed, which in most seasons is produced abundantly, but my tree failed this year for the first time, which I attribute to the constant rains which prevailed during flowering time, and prevented fertilization; it also grows readily from root-cuttings....Another tree or shrub I would like to make better known is the

SORREL TREE, *Oxydendrum arborum.*—I had a fine one, 15 feet high, which was killed to the ground in the winter of 1872-73; it threw up several stems from the root, and I like it better in this form, a dense bush six feet high and the same across, than I did as a tree. Its long pendulous racemes of lily-of-the-valley-like flowers make it a charming plant in June and July, and its foliage, which is so clean and shining in summer, turns in autumn to such a fine crimson that if it did not flower, it would be worth growing as a (horrible name!) "foliage plant." There are so many good things not generally known that the catalogue of them would be quite as large as of those which are known. But I cannot close without a word for the

PERENNIAL PHLOXES.—I know of no more satisfactory plants than these, and though I have written about them before, I think the facts should be repeated that they are perfectly hardy, keep in bloom a long while; they flower most abundantly, and give a wide range of colors from pure white to crimson, with various sorts of marked, shaded, and otherwise variegated flowers. A dozen sorts cost but little, and make a grand show of themselves, and when the clumps get too large, you can divide them, benefiting your own plants, and blessing your neighbors with the surplus, and like the shepherd, you may get rich (in thanks), by the increase of your *Phlox*. These may also be raised from seed. I had some come from self-sown seed that were, some of them, quite as good as the named sorts. Seeds sown this month will give plants large enough to bloom next year.

# THE HOUSEHOLD.

☞ (*For other Household Items, see "Basket" pages*).

## Home Topics.

BY FAITH ROCHESTER.

### Farmers' Families.

One would suppose from much that is written, that farmer's families were to be pitied above all others. Is this so? Is the lot of the farmer's wife necessarily lonesome and dreary? Are farmer's children more abused than other children?—I can not see that such is the case. With a good husband and children, I would rather take the risks of farm life in any comfortable part of the country, than to undertake any other kind of life I have had a chance to try or observe. No position is exempt from troubles and temptations, but for a family of little children, a farm seems to me the safest place. And yet every thing "depends upon circumstances," and if the children take no interest in the farm or country objects, and if parents take less interest in the children's daily happiness and growth than money-making, the case is a hard one for all concerned. Since these papers were begun, I have lived in city, village, and country, and nothing suits me so well as the farm. In this the whole family are agreed. At present, agricultural papers and catalogues are voted among the most interesting of literature, and there is a never-failing interest in the growth of everything upon the place. I shall not tell what small business our present farming is; it is all that we can manage just now, and looks likely to increase with the passing years.

Farmers' wives are not necessarily over-worked more severely than other house-keepers. This depends upon the kind of work done on the farm, and the facilities for doing it. In fact, it depends mainly upon the husband. By proper consideration, he can generally save his wife from undue labor—at least he can do so as well as other men, for I think that it is almost impossible for husbands in average circumstances, at the present stage of civilization, to give the mothers of their children as easy and pleasant circumstances as all mothers ought to have, for the sake of the human race; this, however, is a matter of public concern quite as much as of private duty, and it is a business in which society and the individual must co-operate.

If the farmer has children, he must remember that their proper care is the most important business of their parents, and it is a great folly or gross wickedness, for him to carry on work which is injurious to them, work that keeps himself and his wife constantly anxious and hurried. If he slaves himself and wife, and the children too, as they grow old enough to be yoked to his business, for the sake of having plenty of money for his children to spend in coming years, he is a very foolish man; but if he is simply bound to get rich, and does not care how much it hurts his wife and children, he is a very wicked man. If the children are not well brought up, they will only squander the money so hardly earned.

Child life on the farm may have a wider range of wholesome experiences than child life in almost any other situation. Stock kindly cared for and petted, trees thoughtfully planted and tended, fruit well selected and cultivated, vegetables raised with a purpose and with thought about their habits and uses, flowers lovingly sown and gathered—all these are wholesome in their influence upon the youthful mind, and furnish a kindergarten of the best kind. Farmers' children who are not over-worked, and whose book education may seem to be neglected, often make excellent scholars when they go to school and college, and go with robust health gained from their early training on the farm.

If farmers' families have the good sense to dress with simplicity, and choose plain articles of furniture that are not too good for daily use and comfort—if they know enough to live on plain substantial food, with home-raised fruit served plainly but plentifully, instead of cake and pie, if among the necessaries of life they reckon good books and papers, they need not be so badly over-worked as they often seem, nor lead such lean poor lives intellectually. As for the social isolation, this is sometimes to be deplored, but it makes all the difference in the world whether it is a loving, happy, improving kind of family set by itself upon the farm, or a selfish, growling, ignorant set of people. The quiet of the farm is one of its chief attractions for me. There are few farms so isolated that our friends cannot find us there, and they who show themselves friendly will have friends.

### Baby Clothes.

A few years ago I described the long flannel wrapper which was the best thing for babies that I knew of then. But now I think I like better than that the waist and skirt I used for my youngest child. I had no patterns, but the same style is in use, more or less, in different parts of the country. The waist is made plain, or straight, rather high in the neck, and with long sleeves. My little one was a May-flower, and needed an outfit for summer. So he had waists of thin silk-warp flannel, though his skirts were all wool. A waist 21 or 22 inches around the bottom when made, 5½ inches long under the arms, with sleeves 7 inches long, and 7 inches around at the arm-hole—will do for the child of average growth, until it is six or seven months old, (or older), and needs short clothes. It buttons behind with four flat pearl shirt-buttons, and the woolen skirt buttons to this waist by eight similar flat buttons. The child is prettily dressed when it has on this white flannel suit, and nothing over this. On many a hot afternoon last summer, my baby was allowed to go so, but mothers who can have every thing they like for baby's comfort, would doubtless prefer a handsome silk flannel wrapper on purpose for hot days. It is not often that we dare to take all flannel off from tender young babes who are accustomed to its use, but it is a shame to burden them with more clothing than seems necessary. The waist and skirt may be made as neatly as one likes. The skirt should be gored, so as to have very few gathers at the top, and those should be at the back. All seams should be laid open flat, and cross-stitched down. The skirt binding should be as flat as possible—wide "flannel binding" is best. I used the linen binding, an inch wide, stitching (with the machine) two lengths of the skirt band together—so that the band was made of white linen binding, lined with the same. In this the button holes were made, upright, or running across the binding, and not parallel with its length. Experienced mothers will see the convenience of having a young babe dressed in skirts which can be changed without undressing it, and this is the chief advantage of the waist over the flannel under wrapper.

A good way to dress winter babies is with a suit like the one described, only made of thicker flannel; over this a flannel Gabrielle suit as long as the skirt and dress, and over this the dress. In this case, the child is supposed to be dressed all in white, and its handsome cambric frocks need something warm underneath. But those of us who have several children, and a good deal to soil the baby's garments, will very likely put warm pretty colored flannel wrappers over its dresses. In winter it should always wear warm stockings even under its long dresses.

Of course the baby's night-dresses should be of flannel so that it may not suffer from the change at night. Half cotton Shaker flannel is good for these, and is preferred by some to all wool material for all of the baby's under flannels. It is very soft, and shrinks little if any. Make the night-gowns long enough to wrap up the little feet. A Shaker-flannel night-gown, made plain on the shoulders, and gored under the arms, like the little day-slips or frocks, is suitable for the whole year. In winter I add a plaid flannel wrapper, loose and long.

A baby needs a large supply of "napkins." Some physicians tell us that they should never be used twice without washing, but few of us can live up to such doctrine. The nearer we can come to it the better for the health of all concerned. I like them made in squares rather than in long towels; then one can be folded thick and placed inside the other, doubled diagonally in such a way as to do the most service. These should never be too thick

and heavy, or drawn too tight around the body. Some careful mothers use three nursery pins for fastening them. Very small nursery (or "safety") pins can be obtained in boxes, and these only are safe for use in a baby's clothing.

Dainty white lined bibs to button around the neck, are needed if baby vomits or drools, and are neat and useful in any case.

**Washing Dishes.**

Some one inquires about a rack for drying the dishes. I have never seen a better arrangement than one of my friends used to have in her sink.

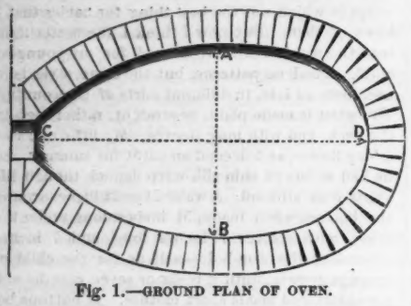



Fig. 1.—GROUND PLAN OF OVEN.

The sink extended across one end of a narrow "cook room," my friend preferring, like some others, a room for her cook-stove too small to serve also as a dining-room, so that she could find room in her house for a separate and distinct dining-room. The sink was in the end of the cook-room next to the pantry, which opened from the dining-room by a door close by the entrance to the dining-room from the cook-room. In the partition between the pantry and cook-room, over the back of the sink, was a sliding door or window, through which the dishes were passed to a shelf in the pantry as fast as they were dried. At one end of the sink was the cistern pump, upon a shelf level with the top edge of the sink. Across the other end of the long sink was the dish rack, which was made to turn up against the wall by hinges, when not in use. It was simply a wooden rack made of narrow slats nailed to cleats, having spaces between about an inch wide, so that plates and saucers could be stuck in by their edges, while cups and bowls and other deep dishes could be turned down upon the rack. Such a rack would hardly obviate the necessity for

Fig. 2.—SECTION THROUGH A, B, FIG. 1.

wiping dishes at all, but it would make that task lighter and less disagreeable. Of course the dishes should first be rinsed in clean hot water. Nothing but perfectly clean water will dry upon the dishes without leaving spots and streaks.

I have never had such a rack or such a sink, but I dislike greatly to wipe dishes that have not been drained from clear hot water. Yet I seldom see any one wash and wipe dishes in my way. Usually the dishes are washed in suds, and then are either passed immediately through hot water and wiped by an assistant, or they are piled up and afterwards are turned *down* in a dish-pan as though to drain them, and hot water is poured over them, (over their backs), after which each is taken from the rinsing water and immediately wiped without previous draining. In either case the wiping cloth is made quite wet, and sometimes two or three are needed for the operation. I think it is a saving of labor, on the whole, to drain the dishes, though one has to use a common dish-pan for it, as I do. There is no other comfortable process if children do the work. A little girl, six years old, washes and wipes all of my breakfast dishes this summer, and usually wipes the dinner dishes for me. She kneels in a chair at the dish-table, and does her work very satisfactorily. I first wash the pans and stone or iron dishes, all of the big, awkward, or very sticky utensils, and my rinsing water serves as her dish water. I get the work all ready for her, placing the plates in the bottom of the dish-pan, with saucers, cups, etc., at the top, and knives, forks, and spoons stuck in around the sides. When I call her to the work, she finds these dishes soaking in warm water, with a clean orderly table to pile them upon as she washes them. Sometimes I get the rinsing water for her from the stove reservoir, but if I am busy she gets it herself if able to empty the big dish-pan of the dish water. This big pan is used for draining the dishes, after being wiped out clean with the dish-cloth. The rinsing water is in another pan, and the washed dishes are run through it, cups first, then bowls, saucers, plates, etc., and all are turned down to drain in the dish-pan. They dry very fast, and the wiping cloth is scarcely damp when the work is done. Some good house-keepers wipe the dishes directly from the first suds, but that never seems to me a clean way of doing.

"I always scald my dishes," boasts one, but I happen to know that her dishes are usually streaked or sticky when put upon the shelves, because she "scalds" them in such an absurd manner, turning them all *down* in her pan, and pouring hot water over the backs of the dishes, leaving the faces of the plates and other dishes unrinsed, while the heating they get from the hot water on their backs dries the suds or greasy dish water in streaks, which do not all wipe off—and so the wiping towels get quickly soiled.

**Material for Pies.**

It is amusing to see how many things, and what odd things, are made into pies, by people who have

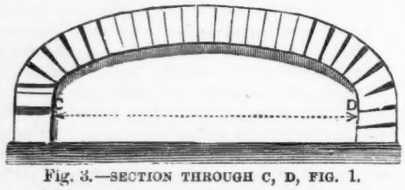



Fig. 3.—SECTION THROUGH C, D, FIG. 1.

been brought up in parts of the country where pie is king of cookery. The strangest material I can think of at the moment is—Night-shade berries! These have actually been used by our neighbors, and I have not heard of any fatal result. It was not the "Deadly Night-shade," (*Atropa*), but the "Black," (*Solanum nigrum*), a near relative of the common potato. I suppose its dark berries look pie-suggestive, but there cannot be any other virtue in them. It seems about as absurd to use elder berries, which have to be "doctored" a considerable to make them delude people into the belief that they are good. Then we have mock-mince pies, made somehow of green tomatoes. I wouldn't give the recipes for these things if I could. The ripe tomato-pie, however, is quite palatable — made by using the tomato like other fruit, slicing it, ripe and raw, into the pie, and seasoning it "to taste." I have never made one, but I have cheerfully assisted at the eating of more than one.

But what is the use of making pies of things that are good enough without any such preparation? It is spending our strength for nought. I only pity my neighbor who values strawberries chiefly as pie material, and I would rather have a good peach in my hand than baked between pie crusts, and I can't imagine a musk melon improved (as some think) by serving it up in a pie.

They tell of bean pies, too—pies made of beans cooked very soft and sifted and seasoned and baked like pumpkin pies. I shouldn't wonder if they are good, as certainly the pumpkin pie, well made, is almost universally liked. Pumpkins and beans have to be cooked somehow before they can serve us as food—not so our apples, peaches, melons and berries. Good fruit may make good pies, however; but if we are to win our way back to Paradise through simplified living, we must learn to eat our fruit with simple bread and butter, adding, perhaps, a little sugar or cream. To make pies of material which is not at all nutritious, and which is even injurious, is, to my notion, a very needless performance.—[We hope no one will be induced to try Nightshade berries as food in any form. There are cases recorded in which children have been poisoned by eating them, and though the heat of cooking may destroy the poisonous principle, it is better not to run any risks. Such different accounts are given of the plant, that it is probably very variable, and consequently treacherous, and to be let alone.—ED.]

## How to Build an Oven and Smoke-house.

The old-fashioned brick oven is still a favorite with many housekeepers, who enjoy the peculiarly sweet, agreeable flavor of the bread which is baked upon the brick hearth. The cast-iron stove which is an excellent substitute when the old-fashioned oven is not to be had, permits some of the gases produced in the combustion of the fuel to escape into the oven, and they to some extent flavor the bread or pastry. The ease with which exactly the proper temperature can be maintained in a brick oven, and the consequent absence of all danger of burning the contents is another of its advantages. We suppose it is on these accounts that of late so many inquiries have come to us for a plan of building a brick oven, simple enough to enable any ordinary brick-layer to construct one.

The bricks chosen for an oven should be hard, well burned, well molded, and with straight edges. This is especially necessary for the hearth. The oven should be located as near the kitchen as possible. If it can be built in the kitchen-wall so that the body of the oven forms an addition at the rear of the kitchen, or in a separate part which could be used as a baking or washing room, it would be more convenient for winter use. But an oven and smoke-house can be built together very conveniently and economically, and in this case it is best

Fig. 4.—THE OVEN COMPLETED.

to have it detached from the house and yet so near to the kitchen door that it may be easily reached. The foundation of the oven is made by building two nine-inch walls of the proper length or about six feet, and six feet apart to a hight of two feet above the ground. Upon these walls are laid cross-

pieces of four-inch oak plank or flatted timber made somewhat like railroad ties. These lie on the wall for the length of half a brick, so that a course of half bricks or whole bricks laid lengthwise may be built to enclose them. At the front an iron bar may be built into the wall and the front course of bricks laid upon it. The spaces between the timbers are filled with mortar and a layer of mortar at least an inch thick is laid upon them. Dry sand is thrown upon the mortar, and the whole bed is beaten with a mallet until it is made hard and compact. Dry sifted coal or wood ashes or sand is then laid upon this bed to a depth of six inches and smoothed down. Upon this non-conducting floor the oven hearth is laid down. The best, smoothest, and hardest bricks are chosen for this. The bricks are laid very evenly and closely together, with mortar, in which a good proportion of wood ashes is mingled. When the floor is laid, the walls are built in the same manner with bricks placed endwise from the inside to the outside, and the oven is shaped as in fig. 1. When the walls are about a foot high, the frames for the center are laid in their proper places. These are cut out of common inch boards of the shape to fit the arched roof. Fig. 2 represents the usual form of the cross-section of the oven in the center, or from *a* to *b* in fig. 1, and these center boards should be of the same shape. The rise of the arch is about 8 inches, giving a total hight in the middle of the oven of 20 inches, and 12 inches at the sides. The boards should be cut in two through the middle, and lightly tacked together, so that they can be easily knocked apart when the arch is dry, and removed from the door. There will be four of these boards needed, two for the middle and one for each end. The end ones should be a little narrower than the others, so as to form the arch lengthwise, as seen in fig. 3, which is the section through the oven from end to end, as from *c* to *d* in fig. 1. Lath are tacked lightly on to the upper edges of these boards to sustain the roof of the oven, and this is laid as carefully as possible, taking pains to fill the spaces between the bricks caused by the curving of the arch, with solid material, as slivers of brick clipped off for the purpose. The wall around the oven and the arched roof should be well bonded together, and brick-work should be laid around the outside of the top of the arch, so as to make the connection between the walls and arch firm and solid. The inside of the oven will then consist of a solid nine-inch wall of brick laid with the ends toward the middle of the oven, or nearly so. This will serve to retain the heat a long time, and will make a very serviceable oven. The outside wall should be carried a few inches above the line of the top of the oven, and dry sand should be thrown in the space to level it off. A plank floor may then be laid across the top, which may serve for the floor of part of the smoke-house above. If no smoke-house is desired an open roof may be placed over the oven which should project a few feet in front so as to give ample protection. Fig. 4 shows the oven when complete. The rear of the open space below should be built up with brick or closed with boards. The form of the door of the oven is seen in this illustration, and a square opening above (shown at *a* in fig. 3) is for the escape of the smoke. This may be made to communicate with a piece of stove-pipe to carry the smoke off above the roof, or a chimney may be built for this purpose. The doors to these openings may be of wood lined with sheet-iron or tin.

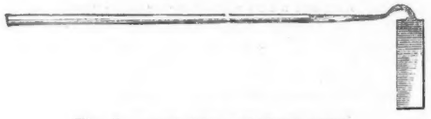


Fig. 5.—RAKE FOR CLEANING OVEN.

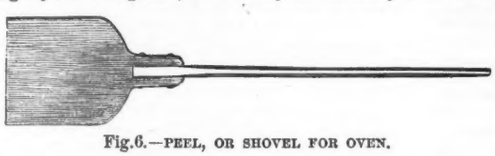


Fig. 6.—PEEL, OR SHOVEL FOR OVEN.

The rake by which the oven is cleared of embers and ashes, is shown at fig. 5. The head of this rake is made of strong iron as it needs to be used sometimes to stir up the fire. The shovel by which the bread is put into the oven and withdrawn when done, is shown at fig. 6. It is made of light wood as it is not exposed to any destructive heat. For those who do not know the manner of using these ovens, we would explain that they are heated by means of finely split dry wood, which makes little smoke in burning and no soot, but much heat. White birch, soft maple, hard maple, hickory, and willow are the woods preferred. The fuel is kindled on the hearth and allowed to burn down to clear coals. When the oven is hot enough, which may be in half an hour to an hour, the floor is cleared out to receive the bread. After the bread is baked, the oven is just right for pies, and after them for drying fruit. If a smoke-house is wanted, this may be built as shown in fig. 8. It should be somewhat larger than the oven to give room for the steps to reach the upper floor. The floor is of earth, and the fire may be made upon one or both sides of the steps. The bars upon which the hams and other meats are hung, lie upon the plates which support the roof. They may be round or square, and it will be found very convenient if the hooks are made so as to slide upon these bars. The hooks may be made of common nail-rod, which is easily bent in the shape seen in fig. 7. The hams are readily hung upon these or hooks, or taken down by having a looped string tied around the hook.

Fig. 7. HOOK.

## Cooking Some Things we Like.

During these many years past we have published several thousand suggestions, recipes, etc., about preparing food. A large number of these have been tried at home, with the object of testing them for the benefit of our great *American Agriculturist Family*, and in this respect the home kitchen has often been a sort of culinary "Experiment Station." From this mass of experiments, we have some articles of food and modes of cooking that have become standard, because they are generally liked, and frequently prepared, as for example:

**Pressed Beef Improved.**—This may be made of fresh beef, or corned beef well soaked to free it of all excess of salt not needed for seasoning. The coarser, cheaper portions of fresh beef may be used to advantage. Put the meat in the pot or kettle with water enough to cover it. Set over the kettle a milk-pan, or other close fitting tin dish, containing water. The steam will condense on the underside of the pan, and drip back into the kettle, carrying with it the aroma and flavor of the meat, which would otherwise escape in the steam. The water will not boil away if the heat be only sufficient (212°), to simply boil the water gently. ☞ *Keep the meat cooking until it is so tender that it will fall to pieces, and the bones drop out.* Some tough pieces may require many hours, *but cook it tender.*—Then take out the meat, remove the bones, and mix it, fat and lean, in a deep basin, pan, or other dish. Skim the remaining liquor of any floating fat, and simmer it down to a gravy consistency, not very thick, being careful not to scorch it. Pour this among the meat, put over it a plate or round pie tin that will fit the dish, and put on 15 or 20 lbs. weight of stones, flat-irons, or other articles, and set aside to cool. The gelatine in the gravy will harden, and you will have a solid mass, marbled in appearance if there is a mixture of meat, fat and lean, or of different colors. This can then be cut in thin slices, is delicious to eat, and easy to digest if there be not too much fat meat. In cool weather, or in a cool place, it will keep several days, and is a very handy resort. Now for the IMPROVEMENT. For each 3 or 4 lbs. of meat, take a tablespoonful of "Cooper's Gelatine," (or other good prepared gelatine), dissolve it in a little hot water, and stir it into the liquid just before pouring it over the boiled meat. This will give increased firmness to the cold mass, and make up for defective boiling down of the liquid. The meat when inverted upon the serving platter for the table, has a smooth exterior of the exact form of the pressing dish. It may be garnished by placing in the bottom of the dish before putting in the meat, some hard-boiled eggs cut in halves and set yolk up.

**Chicken, Turkey,** and other meats, to be cooked and pressed similarly to the above, will be much improved by the addition of gelatine.

**Corn-Starch Cake.**—This is a simple and digestible cake, easily and quickly made, and generally liked. Rub well together 1 cup of butter and 2 cups of sugar. Add the white of six eggs beaten to a froth. Stir in 1 cup of sweet milk, 2 cups of flour, in which have been thoroughly mixed 2 teaspoonfuls of baking powder or 2 of cream of tartar and 1 of soda, and flavor with 1 teaspoonful of extract of bitter almonds (or other flavor desired). Lastly, stir in 1 cup of corn-starch, which acts both as food and shortening. Immediately bake in a moderately quick oven.

**Queen of Puddings.**—A simple, easily digestible, and (to our taste) a very palatable dessert. Beat the yolks of three to five eggs, and mix in a quart of milk with sugar to the taste (about a teacupful). Flavor with vanilla or otherwise, and pour this over a pint of fine bread-crumbs in the pudding-dish. Bake to a light brown; remove from the oven, and while hot pour over it the whites of the eggs beaten to a froth, with ½ to 1 cup of sugar. Replace in the oven leaving the door open, and bake to a delicate brown. Some like jelly spread over the pudding before adding the frosting.

**Corn Fritters.**—Grate a dozen ears of sweet green corn, (uncooked), add 1 teaspoonful of salt, ½ teaspoonful of fine ground black pepper, 1 egg beaten with 2 tablespoonfuls of flour. Make into small cakes and fry in hot butter or lard.

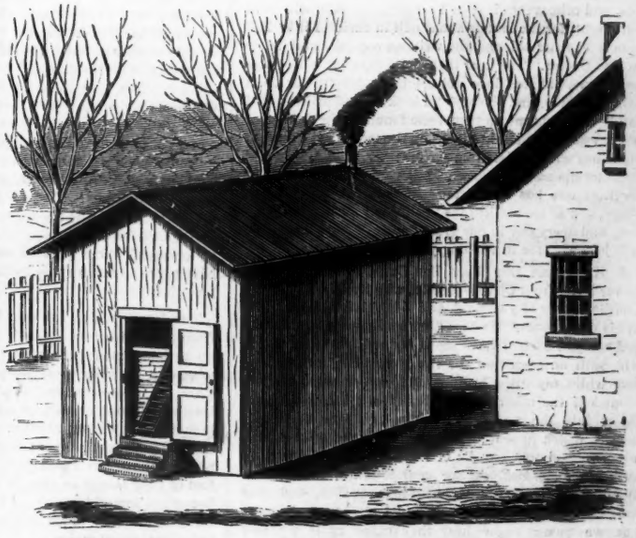


Fig. 8.—REAR VIEW OF COMBINED OVEN AND SMOKE-HOUSE.

# BOYS & GIRLS' COLUMNS.

## October.

Last month we told you that we had come to the months with names from their numbers; as that was the seventh month, so this was the eighth month of the old Roman year, which we told you began with March. *Octo* is the Latin for eight. There is nothing of special historical interest connected with the month, but it is one in which boys and girls make history very fast. We said last summer that June was the youngster's month; we were a little hasty in saying this. It should by all means have been October. Now come the perfect days, now the gorgeous colors, now that wonderful stillness in the woods, when you can hear a nut drop. Nuts and nutting! We said that you youngsters made history this month, and when you boys and girls get older, you will look back on some Saturday this October, as one of the happiest in the history of your lives. It is not a history that will be down in books, and no one else will read what is written in your memory. But these October days, their sights, sounds, and even odors, the words, smiles, and little kindnesses, these when you are older will, when you least expect them, all come back with a strange freshness.

**No. 446. Puzzle Picture.**—You see the sea—you can't miss that; but you are to see a Miss. She

may be going to sea; she may be waiting along the shore. She's quite young, but of a most uncertain age, as you will find her over nine and under eleven.

## Answers to Correspondents.

BY THE DOCTOR.

A LITTLE LAME GIRL.—Her name is Bell, and she lives in a log house near Lake Memphramagog. Do you know where that is? some perhaps will say it is in Canada, and others that it is in Vermont, and both will be in part right, for the lake is about half in each. Little Bell is only 10 years old, and she writes a very pleasant letter to The Doctor. The dear little child says she has always been lame, but she does not let that prevent her from using her eyes, and she says "I look around and see all I can."—She sent me an insect she found on the door-step, but it was so broken in pieces by the mail, that I can not make out what it is. She writes: "I have a splendid dog, and his name is Rover. I have three cats, and the prettiest one has two kittens; the old cat is black and white, and so are the kittens."—Enjoy your pets my little one, and every one in our great family of boys and girls will join with me in wishing you much happiness.

A KENTUCKY BOY USES HIS EYES.—Here is a very clever letter from Charles Martin, who lives in Kentucky. Charlie is only 11 years old, and I let him tell his story in his own words. He says: "I have concluded to write and tell you what I have seen. I have a very kind Pa, who built an aquarium for the pleasure of us children, and while my little brother and myself were playing around it the other day, we found a cricket which we threw into the water. We soon saw two horse-hair worms, which appeared to come from the cricket, and when we had told our Pa of them he told us where to look in the *Agriculturist* for your letter on the subject. We had often heard of horse-hair snakes, and that horse-hairs turned to snakes, and had seen the worms, but we never knew how they came until we saw those, and read your letter. They were quite a curiosity for brother and me; we saw the worms laying the eggs of which you speak; they came out of the worm looking like a white thread several inches long, we put this thread-looking thing under the microscope, and could not see anything in it that looked like eggs, until we burst open the shell or skin, by squeezing it between two glasses, then we saw hundreds of roundish looking things, that we supposed were the eggs, and this thready looking thing appeared to have been stuffed with the eggs like a sausage skin.

BIRDS AS PETS.—Charlie S., in Venango County, Pa., wishes me to tell him how to catch humming birds and crows to tame as pets. There are some birds which seem to enjoy life in confinement, and not only become tame, but so attached to those who have the care of them that they will not go away when allowed their liberty. Then there are other birds which will not live in a cage, but mope and pine away when deprived of liberty, and others which, while they will live, never become contented, but always appear like prisoners on the look-out for a chance to escape. However it may be with other birds, I do not think it right to shut up those of either of these two kinds. Indeed I am not sure that it is best to shut up any of our native birds at all. Those who keep cage birds say that they are much better off, as they are not shot at by overgrown boys or hunted by hawks, owls, and other enemies. I will not talk about the right and wrong of the matter now, but only say that from a selfish view of the matter the birds should be free, as they can then serve us much better than when caged. There are but few birds which do not at some time in their lives feed upon insects, and every farm in the country needs many times more birds than it now has, to kill the injurious insects—so for our own good we should neither kill nor shut up the birds. But to answer Charlie's question we must say something about the habits of

HUMMING-BIRDS.—Though so beautiful and so small, the humming-bird, (for but one is common in the northern states), is one of the most quarrelsome of all birds, and as full of fight as a game fowl. As with passionate boys, the humming-bird's disposition often gets it into trouble. Did you ever see one of its nests? It is a cunning affair, usually on the upper side of the limb of an apple tree; it is only about an inch and a half across, lined with soft down, and so covered on the outside with lichens, (some call them mosses), that you might hunt for a long time without finding it, as it appears much like an old knot upon the tree. Whenever a person comes near the nest, the birds immediately show fight and attack him. It seems rather foolish of the little things, after taking so much pains to hide the nest, to get into a passion and let the secret out. The nests are rarely found in any other way, and when thus discovered the young birds when about ready to fly have been taken. I never knew the old birds to be taken in but one way; I have known several of them to be caught which had flown into a room or greenhouse where there were flowers in bloom, and by quickly shutting the windows the little birds were captured. I never knew one to live long after being taken, but have read accounts of those which have been kept several months, but they are warm weather birds, and die on the approach of winter in spite of all care. As so many have failed in trying to keep them, I do not think my young friend need feel very sorry that they are so difficult to catch. It is much pleasanter to see them about the flowers, with their beautiful plumage glittering in the sun, than to shut up the impatient little things. Most persons think that they visit the flowers for the honey, and they probably do eat some of it, but their chief food is insects, which are attracted to the flowers by the sweet liquid many of them contain. As these birds fear cold weather, you will probably wonder how they pass the winter. They go south. In September, when the young birds get strong, they all, parents and young, start on their long journey towards a warmer part of the country. Isn't it wonderful that these tiny things will go on and on for hundreds of miles! There is some reason for thinking that either the old or the young ones come back to the same place the next season, as a nest has been known to be occupied three seasons, one after another. But I have given so much space to humming-birds I have little room left for

THE CROW, which can only be tamed by being taken from the nest before it can fly; then it must be brought up by hand until quite able to feed itself, and this is more of a job than most people care for. Young Jim Crow is a great eater, and wants his food very often, at least every hour or two, or he will begin to cry for it. Something is said on another page about the taming of crows by young Indians: they will do well enough as pets for them, but if you have any regard for the comfort of your family or that of your neighbors, you had better pet something else. I had one once, and did not know before how much trouble such a solemn-looking individual could make.

"PENNY" AND NAILS.—"H. S. M.," wonders why nails are called four-penny, six-penny, etc., to describe their sizes. It is said to be from the old English way of reckoning the sizes, the "penny" being used instead of pound. Four-penny nails were such as weighed 4 lbs. to the 1,000; ten-penny were 10 lbs. to the 1,000, and so on.

## What do You Call Your Father?

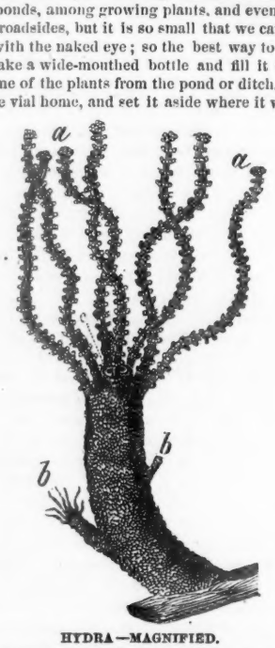
"The old man won't let me go."—"Pshaw! my gov'ner 'll let *me* go."—"Well, I havent said anything to my pop about it."—Such talk among boys is very common. When boys get to be of a certain age—from 12 to 16—they seem to think it manly, in speaking of their fathers to other boys, to use some slang word. We hear "Old Man," "Dad," "Old Squaretoes," "Pop," "Governor," or "Gov.," instead of father, one of the best, and which should be—next to mother—the dearest of names. This nicknaming is not by any means confined to rude and rough boys, but unfortunately prevails among those who have been well brought up, properly educated, and have pleasant homes. It would be sad indeed, if these names were used to express disrespect, or contempt, but they are heard, and more's the pity, from the lips of those boys who really love their fathers, and would at once resent it if anything disrespectful were said of them. Not one of the boys who is in the habit of speaking of his father by a slang name, would go to him and say "Old man, won't you please" do this or that, or say "Good-night, pop." It is a very safe rule never to speak *of* your father—or in fact any one else—by any name you would not use in speaking *to* him. The good old Saxon name father, is not only a pleasing word, but it is appropriate at all ages, whether from the tiny child or the full grown man. Boys, don't use slang at all, but especially not when you mean Father.

## The Hydra, and How it Lives.

BY MRS. MARY TREAT.

The Hydra is an animal low in the scale of being, as compared with some of the other minute animals. By this is meant, that it has but very few parts, and these are very simple. We may say that the Hydra is all stomach and arms, for though we speak of it as having a body, this is nothing more than a bag or sac, which is both stomach and body; this is usually fastened by one end to some object, and at the other end is a hole which is the mouth; around this are several arms, or *tentacles*, of the same material as the body, with little wart-like projections scattered along their whole length. We will see the use of these little wart-like bodies further along. The animal can withdraw or extend these arms at pleasure, and the creature has the power of distending its stomach to an astonishing size, for so small an animal.

The kind of Hydra here figured is common in fresh water ponds, among growing plants, and even in ditches by the roadsides, but it is so small that we cannot easily see it with the naked eye; so the best way to capture it, is to take a wide-mouthed bottle and fill it with water and some of the plants from the pond or ditch. We now take the vial home, and set it aside where it will not be




HYDRA—MAGNIFIED.

*a*, *a*, arms or tentacles; *b*, *b*, buds; *c*, mouth.

disturbed for a few hours. After giving time for the strange animals to make themselves at home, we take the vial and hold it up to the light, and if we have caught any Hydras, by looking carefully, we may see them clinging to the side of the vial, or hanging head downward from some little spray of plant. To see the little animal properly, it must be magnified; a hand-glass will help, but the best view is had by the aid of the microscope. The engraving shows the Hydra largely magnified.

It is a slow, sluggish fellow, too lazy to pursue its prey, and so it fixes the extremity of its body in a suction-like

way to some plant or whatever it happens to come across, throws out its long arms and waits for prey. It reminds me of a lazy fisherman, who fixes himself in a comfortable position, and then throws out several lines to tempt the sprightly little fishes. But the lazy fisherman, as well as the Hydra, makes a very uncertain living, for not always are the fishes to be tempted by the bait, and the lively little creatures for which the Hydra is fishing, seem to be on the alert, and so both fisherman and Hydra are often obliged to take in their lines without having caught their suppers. But when the Hydra has good luck—when some poor creature runs against one of the long arms—it is immediately seized by the arm, and then the other arms are wound around it, and it is forced down the gaping mouth into the bag-like stomach—actually swallowed alive; under the microscope we can see the little captive through the transparent walls of the stomach, moving about, until a film gathers around it, gradually hiding it from sight, until the whole is lost to view.

Sometimes the animal slips out of its long arms, and escapes from the Hydra, but if it happens to be an animal with a soft body—no shelly covering to protect it—it soon dies. Those little wart-like prominences on the arms are the receptacles of poison darts, which the Hydra thrusts into its victim; these paralyze and soon kill it.

The Hydras increase in a funny way; little bud-like knobs start out anywhere on the body of the parent, and these are the young Hydras just beginning to grow; after a short time, arms are developed on the little ones, and they begin to catch their own food while still fast to the parent. After a while, when the young have become old enough, they break away from the parent, and swim about, and at length attach themselves to whatever they please, and spreading out their fishing-lines, catch their prey, and raise families in the same way their parents did before them.

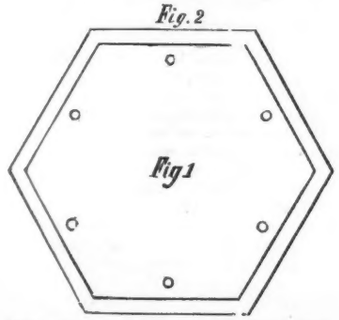
## Aunt Sue's Chats.

ISAIAH S.—The letters for the alphabetical arithmetic, when placed in order from one to nought (or ten), form a word or sentence; and as a puzzle one may sometimes discover the "*key*," anagramatically, when he is not able to work out the sum.

EDDIE F. G. asks why Boston is called "the Hub." It was the name Dr. Holmes gave it, when he facetiously suggested that the whole of Creation turned on its axis. I can give you the "nicknames" of several other cities, which names suggest "their origin" New York is called Gotham; Philadelphia, the Quaker City; Baltimore, the Monumental City; New Orleans, the Crescent City; Washington, the City of Magnificent Distances; Cincinnati, the Queen City (or jocularly Porkopolis); New Haven, the Elm City; Detroit, the City of the Straits; Chicago, the Garden City; Pittsburgh, the Smoky City; Cleveland, the Forest City; Indianopolis, the Railroad City; St. Louis, the Mound City; Louisville, the Falls City; Keokuk, the Gate City; Brooklyn, the City of Churches.

M. L. E.—"The difference between cashmere and merino" is simply—that merino is twilled on both sides and cashmere on only one.

CLARA L. wants the "pattern of a pretty, cheap, easily-made card-basket." I think I can suit you exactly, Clara. Cut two hexagons out of white card-board; one a little larger than the other, as shown in figs. 1 and 2. Paste them together, one on top of the other. Cut a little hole with a




Figs. 1 and 2.—BOTTOM OF CARD-BASKET.

punch, in the centre of each side of the base, as in the pattern, and place it under a weight to dry, while you cut out six pieces like fig. 3. These pieces you may paint, or "spatter," (with ferns, etc.,) or decorate in any manner you choose. Then tie it all together with narrow ribbon, leaving the bows *outside* at the *bottom* of the basket, and *inside* at the *top*. If that is not simple enough, you can cut the six pieces of the shape of fig. 4, stick fancy paper on it, bind it with ribbon, and *sew* the sides together, and the base (fig. 1), which must also be bound with narrow ribbon. You can vary the style of ornamentation, according to "your own sweet will."—[The pattern given

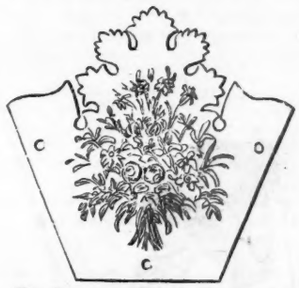


Fig. 3.—ORNAMENTAL SIDE-PIECE.

here is just half the proper size; Aunt Sue sent her drawing the full size, but it takes up more room than we

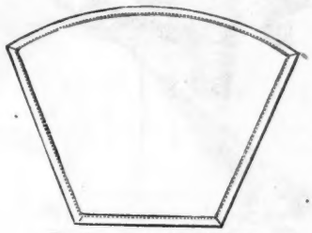


Fig. 4.—PLAIN SIDE-PIECE.

could spare; you can easily draw a pattern just twice the size given here, upon a piece of paper, to serve as a guide.—ED.]

ENGLISH GIRL.—To the best of my knowledge and belief, "Queen Victoria's crown" contains 1 large sapphire and 16 smaller ones, 11 emeralds, 1 large ruby and 4 smaller ones, 1,364 brilliants, 277 pearls, 1.273 rose diamonds, and 147 other diamonds. It was made in 1838, principally with jewels taken from old crowns.

MUSHROOMS.—A little girl (whose letter is not at hand) wishes to know how to tell mushrooms from toad stools. This is a difficult matter to tell, but a very easy one to show. The editors inform me that they expect soon to have something on the subject for the old folks, and she will be perhaps able to learn something from that.

## More about Cats.

A kind lady in Wisconsin sends you this:—The story in the August *Agriculturist* about the kitten and the doll, reminds me of a kitten I had when a little girl. A neighbor gave me a little gray and white kitten, and shortly after another neighbor had the misfortune to lose in one night an old hen and her entire brood, save one poor little chick; that one she gave to me. The pets were soon on the best of terms. When chick got old enough to use her wings a little, the two would have great sport. Chick would go round and round the house as fast as her legs aided by outstretched wings could carry her, with kitty close to her heels; when he caught her, they would have a rough and tumble play for a while, and then another race. When tired of out-door sports, kitty would get on his bed and chick would fly up and nestle down close to him; kitty would wash her feathers, cat fashion, and when she was all cleaned up nicely, they would sleep, kitty's paws encircling chick's neck. Kitty would never hurt her, though he often pretended he was going to bite her. Chick, when she had grown to be a hen, never forgot sleeping with kit, for, as long as she lived, she delighted to steal into the house and make a nest in some corner on a lot of rags, nor would she scruple to get upon the bed if allowed.

Though many cats are of a roving disposition, all are not, for some of them have a great love for home. I will tell you of what happened to one of the pioneers of Wisconsin. When the state was first settled, cats were scarce and mice plenty, and people would take a great deal of trouble to obtain a cat. One family which was moving into the state, while on the way, procured an old cat and two kittens. The family traveled twenty miles from the place where they got the cat and kittens, and camped for the night, for there were then no railroads or hotels; when they arose in the morning, they found pussy had deserted with her two babies. Great was the surprise of her former owner, to find that on the second day after their departure puss and her babies were safe in their old quarters. As puss could carry but one kitten at a time, she must have traveled the entire twenty miles three times over, besides hunting her food; she doubtless carried one for some distance, and leaving it in a safe place, returned and brought up the other one, and by thus going back and forth, they at last all reached their old home. That cat had no idea of being a pioneer.

## Aunt Sue's Puzzle-Box.

### POSITIVES AND COMPARATIVES.

(*Example.*—Lick, liquor.)

1. An animal, a rope. 2. Part of the body, a beverage. 3. A spice, a flower. 4. An exclamation, a margin. 5. A sanctuary, a poet. 6. An exclamation, a propeller. 7. A vegetable, a nook. 8. An exclamation, an element.

BESSIE.

### NUMERICAL ENIGMAS.

1. I am composed of 26 letters:
   My 17, 1, 10, is an article of clothing.
   My 10, 2, 18, 26, 16, 4, 13, is a kind of support.
   My 9, 22, is an adverb.
   My 17, 11, 7, 3, 19, 9, 15, is a girl's name.
   My 5, 15, 25, 20, 11, is used on the plains.
   My 14, 21, 24, 23, 13, is an imaginary being.
   My 8, 12, 1, 16, is an insect.
   My whole is an old, well-known proverb. L. S. H.
2. I am composed of 24 letters:
   My 16, 12, 24, is a weapon.
   My 11, 13, 12, 20, one likes to be during a storm.
   My 23, 3, 19, 21, 10, 7, is astonishing.
   My 9, 14, 24, 4, is a suggestion.
   My 5, 17, 18, 15, 8, is to raise.
   My 2, 22, 1, is a nickname and a crime.
   My 2, 22, 1, 6, is an article of clothing.
   My whole is a message which effected a reconciliation between two men who had quarreled in the morning.

ADDIE.

### DOUBLE ACROSTIC.

1. To architects a name well known,
   In books on architecture shown.
2. A word that leads to all success;
   If you would know it, do no less.
3. When in the darkest ways we glide,
   This is a safe and certain guide.
4. One from whose lips each zealous word
   By eager patriots was heard.
5. A plant imperfect, not complete
   In all that we with pleasure greet.
6. In climbing upward as we rise,
   What forms our steps t'wards azure skies?
   Primals—finals name a book
   For which most others we forsook. HENRY.

### NAMES OF RIVERS, ETC.—ENIGMATICALLY EXPRESSED.

1. A variety of grapes. 2. What a tree cannot live without. 3. Suggestion of an African Chief. 4. What a miser does, and a girl's name. 5. The first Bishop of Jerusalem. 6. A domestic animal and where she feeds. 7. A relative and an animal.

MARY E. S.

### DIAMOND PUZZLE.

1. A vowel. 2. To place. 3. A fright. 4. A lover of children. 5. To go out. 6. Necessary to playing billiards. 7. A vowel.

LITTLE ONE.

### CHARACTERISTIC INITIALS.

(*Example.*—"Cultivated Statesman"—Charles Sumner.)

1. Just, Good and Wise. 2. Writes Cultivated Books. 3. Safe Counsellor. 4. Mighty Artist. 5. Daring Orator. 6. Bold Traveller. 7. Always Lamented. 8. Temperance Story Teller. 9. Graceful Genius. 10. Every Day Ever New Stories.

M. P.

### CROSS WORD.

My first is in parch but not in dry,
My next is in head but not in eye,
My third is in wheat but not in hay,
My fourth is in river but not in bay,
My fifth is in pelf but not in gold,
My sixth is in rude but not in bold,
My seventh is in light but not in day,
My eighth is in June but not in May,
My ninth is in stone but not in rock,
My tenth is in clasp but not in lock,
My eleventh is in slow but not in late,
My whole is what all should cultivate. MAMIE.

### PI.

Noe fo het stom tropimtan lures fo het sceneic fo annrems, ai na tomsal aubstole license ni grader ot rousefly.

### ANSWERS TO PUZZLES IN THE AUGUST NUMBER.

ANAGRAMS OF FAMOUS BATTLES.—1. Marston Moor. 2. Marathon. 3 Sebastopol. 4. Culloden. 5. Bunker Hill. 6. Austerlitz. 7. Solferino. 8. Cowpens.

NUMERICAL ENIGMAS.—1. Skating. 2. Benjamin Franklin.

PI.—Economy is the easy chair of old age.

SQUARE WORDS.—1.—N O R A / O M E N / R E I N / A N N A  2.—H O R N / O H I O / R I F T / N O T E

CROSS WORD.—Philadelphia.

CHARADE.—Bismarck (his Mark).

DECAPITATIONS.—1. Gloss, loss. 2. Glove, love. 3. Frock, rock. 4. Flint, lint.

DOUBLE ACROSTIC.—C—ale —B—Cactus, Balsam.
A—mell —A
C—ame —L
T—hame —S
U—tic —A
S—ubstratu—M

HIDDEN GAMES.—1. Whist. 2. Jackstones. 3. Bagatelle. 4. Marbles. 5. Dominoes.

TRANSPOSED APHORISM.—After a storm comes a calm.

Thanks for letters, puzzles, etc., to American Jack, Julia E. G., Little One, L. W. B., Frank M. G., Mary A. E., F. D. K., M. H. H., Allie W., Sam, J. S., Gertie L. B., Lidie S. H., Edie B. M., Kate J. C., Mary E. S., Sphinx, Amanda H., Geo. H. F., and Mrs. M.

I would respectfully suggest to my nieces and nephews that numerical enigmas made upon their own names, or upon the name of one of their friends, are not of sufficiently general interest to be published.

*Send communications intended for Aunt Sue to Box* 111, *P. O., Brooklyn, N. Y.*, and *not* to 245 Broadway.

YOUNG INDIANS ON THE MOVE.—*Drawn and Engraved for the American Agriculturist*

Pictures of old Indians and their ways are common enough, but we do not often learn much about the Indian boys and girls. Allowing for their different ways of living, young savages are much like civilized youngsters. In one thing, however, they differ from white children. We have seen little Indians of a great many tribes, and never knew one of them to cry. Even the pappooses—which you know are baby Indians, tied to a board or basket-work frame—have better manners than to cry. It may be that they have a little quiet cry when nobody is near, but of the hundreds we have seen, hung up in trees, on their mother's backs, or set anywhere out of the way, we can not recollect that one of them cried. It is not about the babies that we wish to talk just now, but about those of your own age—Indian boys and girls. It may be that some of you in reading stories about the wild free life of the Indians, of their fast horses, and their buffalo hunts, have thought how grand it must be, and may be half wished you could lead such a life. The beauty of it is all in the stories; in reality the life of the savage is a hard one, and he is really a very unpleasant person. Just think that these Indian boys and girls have no proper homes! They have tents, or wigwams, which they move from place to place, but these are very small, and the family huddles together in a very uncomfortable manner; all that belongs to them, their house included, can be packed on a few horses and the backs of women, and taken to another place. When game gets scarce, or there is no grass for their horses, they pack up and go where these things are more abundant; or if they fear the approach of an enemy, for the tribes are often at war, they make a hurried removal, to get the women and children to some safe place. From one cause or another moving day comes very frequently with the Indians, and it is very fortunate that they have no cooking stoves or pianos, or many other things that we consider necessary for proper house-keeping. With us, moving day when it comes, is a great day for the boys and girls, who are as busy with their own matters as the older people are with their's. The dolls' dresses must be packed away, the dolls' furniture must go without scratching; the little tea-set must be packed so that it will not break—Oh! how many things little Miss has to look after; then the bird, and it may be kitty, and above all the dolls, these are to be trusted to no one else; these she must take herself. There is the brother, he has so much to do that he can hardly find time to help his sister, for he finds himself very rich at moving time; the balls, tops, marbles, and all the rest of the toys; that windmill he has been making, and which has been almost finished so long; the shells uncle Thomas brought from sea, and the minerals he collected himself; then the books and ever so many other things, and especially Nero, the dog, all these fall to the boy's share on moving day, and a very busy day it is with him. The Indian boys and girls have none of these things to look after; their principal pets are the puppies; for in some tribes there seem to be more dogs than Indians. The above engraving represents a scene which Mr. Cary saw in the far west, which shows the part the young Indians take when the tribe is on one of its frequent moves. These youngsters have learned not to carry anything themselves that they can pack upon a beast of any kind; the old ones have no mercy upon their horses, but pack them with as large a load as will stay on, and then put a woman or two on top of all; in the same way the youngsters load up the dogs, and make them carry their pets, the puppies, and the crows. Indian boys are very fond of tame crows; they catch the birds when young, and make pets of them, just as some white boys do. We have told you before what mischievous things tame crows are, but among the Indians they can steal but little, and the sly ways of the birds seem to amuse them. You will perhaps wonder why these young Indians do not travel in the road, but you must remember that there are no roads in the unsettled territories, and they are following the course of some river, along in what is called the "bottom lands," or that portion which is overflowed during freshets, and where there is a growth of willows and other tall, slender plants, which form a thicket not so very difficult to get through, and tall enough to hide a party even if on horseback.

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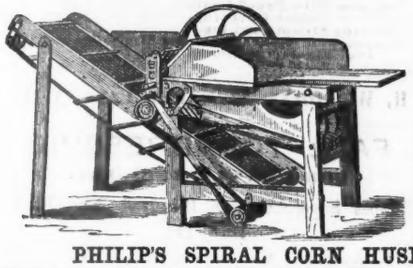

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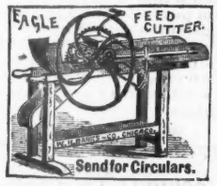


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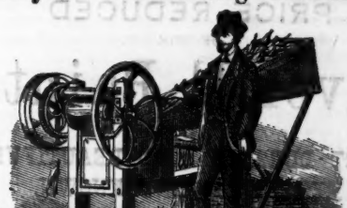

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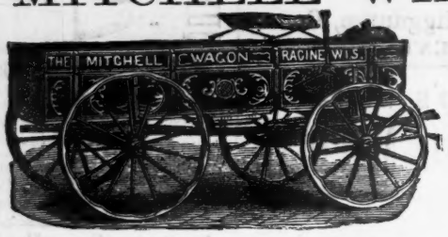


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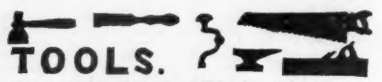

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*containing a great variety of Items, including many good Hints and Suggestions which we throw into smaller type and condensed form, for want of space elsewhere.*

## Continued from p. 371.

**Founder in a Horse.**—"C. B.," Groton, N. H. Founder consists of inflammation of the laminæ or leaves of the foot—those highly sensitive plates which dovetail into each other, and connect the interior of the foot with the outside and insensitive horny part or hoof. When foundered, the horse will hardly move, throws his weight upon the hind feet, and spreads his fore feet forward as far as possible, to relieve them from weight. The head is thrown up, the horse breathes hard and fast, is highly fevered, and expresses in many ways his distress and suffering. Acute founder may be cured, but always leaves the horse tender in his fore feet, and subject to a repeated attack on the first imprudence in feeding, watering or driving. Chronic founder renders the horse valueless, and a burden to itself and its owner.

**Poultry for Eggs and Meat.**—"F. H. S.," Chicago, relates his experience as to the best fowls for market and for winter layers. He writes: "I crossed a Brown Leghorn cock to a Dark Brahma hen. This cross produced a splendid bird. And here let me say to those that raise poultry for the market, do not breed those large raw-boned Asiatics, they do not pay. When dressed for the market, they will not bring as much per pound as even the common barn-yard fowl, and, though I admit that their weight will make up the deficiency, they will consume twice as much food to do it. As to food, I give corn-meal, barley, wheat, bran, and oats, mixed and scalded; also once a week chopped liver. The fowls do not get tired of this food, and it is excellent for producing eggs. In winter I keep my poultry in a warm cellar. With good feed, warm housing, and care that too many fowls are not kept on the farm, there is no danger that poultry will not pay."

**Manure for Grain.**—"E. T. B.," Jewell City, Kansas. A soil rich in vegetable matter, but deficient in mineral constituents, will be apt to produce plenty of foliage and but little grain. What is wanted in this case is lime, superphosphate of lime, wood ashes, or bone dust. In your case it would undoubtedly pay to arrest a portion of the immense quantities of bones which are daily carried from the western parts of the state, and apply them to the soil. They would furnish lime, phosphoric acid, and nitrogen, all indispensable substances for the production of grain, and very rapidly exhausted by grain crops. Unfortunately the vast supply of bones so near at hand, is neglected by western farmers, and allowed to go past their doors, to be profitably used by farmers 3,000 miles away.

**Capacity of a Cistern.**—"M. L. W.," Selin's Grove, Pa. To find the contents in gallons of a rectangular cistern, multiply the depth and width both ways in feet together, and then multiply this by 7½. The first sum is the cubic feet, and the latter the quantity of gallons contained very nearly. For a circular cistern multiply the diameter by itself, and then by .7854, (or those who do not understand decimal fractions, may take three-fourths of the product). This sum is multiplied by the depth, and the result is cubic feet. Then multiply by 7½ as above.

**Merino Sheep and Shepherd Dogs.**—"C. H. C.," Chatham Co., Neb. The flock of Merinos bred by Mr. Chamberlin, of Red Hook, Dutchess Co., N. Y., is a very choice one, and is under the care of an excellent shepherd, Mr. Carl Heyne. By stating the sort of ram wanted, you could probably be suited from this flock, without the expense of selecting personally. Probably a shepherd dog could also be procured there.

**Sprinkling Hatching Eggs.**—"W. S.," Wilson Co., Tenn. For very good reasons it is considered of use to moisten the eggs during the process of hatching. This may be done without any difficulty by sprinkling the nest while the hen is off for feeding; once or twice during the incubation is sufficient.

**Cow Pox.**—"S. E. C.," Stormont Co., Ont. The teats and udders of cows are liable to various other forms of eruptions, which may be confounded with the true cow pox. The true cow pox may be distinguished by the fevered condition of the animal for three or four days before the eruptions appear. These are at first hard, red spots, about the size of the point of the finger, which

soon enlarge, rise in the center, and in ten days form a pustule, which contains first a clear fluid, but afterwards a thick pus. There is a red ring around the base of the pustule, and it is depressed or sunken at the point or summit. This latter peculiarity is a special characteristic of the disease. The pustule dries up and forms a crust, which in about ten days more is easily removed, leaving a red, shining spot on the skin. The proper treatment is to use a milking tube, to draw off the milk, to keep the sick animals by themselves, and to have separate attendants for them. Unless the stables are thoroughly disinfected by whitewashing with lime, the disease will be apt to reappear every year. It is rarely that this disease is very troublesome in this country or Canada, and good nursing, warmth, and administering half an ounce of *sulphite* of soda daily, during the first stage of ten days, will generally prevent very ill effects. The milk of cows affected with this disease should not be used for food, except for calves and pigs.

**"Grub in the Head."**—"R. S. F.," Litchfield Co., Conn. It is not probable that the death of your sheep has occurred from grubs in the head. These parasites rarely, if ever, cause death. They annoy the sheep while crawling up the nostrils to the nasal sinuses, where they live quietly until the time for their change to pupæ, when, in crawling down, they again irritate the sheep and cause violent sneezings and stamping with the feet. In all cases of sickness among animals, it is necessary to send a full statement of the symptoms, in order that we may form a judgment of the true cause of the trouble. There is a serious and fatal disorder of the brain caused by a parasite known as hydatid, which is a tape-worm in one state of its development, and is not uncommon. This appears as a watery bladder in the brain, but it is not what is known as "grub in the head."

**Poultry and Eggs for Profit.**—"J. P. W.," Buffalo, N. Y.—One man out of ten thousand might probably go into the business of raising eggs and poultry for market profitably; but the chances are that every one of the others would fail. It is a business that requires as much tact, patience, practical knowledge, and habits of close and careful observation, as bee-keeping. A suitable place is also needed, and a locality where fresh eggs and spring chickens bring a good price. The knowledge of what is required can come only through experience, and can not be communicated, except with a great deal of detail. That there is profit in the business is certain, but only when the right man goes into it in the right place.

**Tomato Catsup.**—(When tomato catsup is desired, the following is the best recipe we have yet found, judging from the taste of the many who have tried it among with other varieties.) For four or five quarts of catsup, boil 1 peck of ripe tomatoes 15 minutes without removing the skins, and strain through a sieve. Put into a little bag 1 teaspoonful of whole cloves, 1 tablespoonful each of unground cinnamon, allspice, and black pepper, and put these with 1 pint of good vinegar, into the strained tomatoes, and boil the whole carefully 3 to 5 hours. When sufficiently boiled and condensed, stir in 1 tablespoonful of ground mustard, and 1 teaspoonful of ground Cayenne pepper. Salt to the taste, and keep in well corked bottles.

**Double Furrow Plowing.**—"B. O. C.," Los Angeles Co., Cal., writes, "On the big farms of this state a man with two pairs of mustangs, (these are the light native horses of the country), and a gang-plow cutting two feet wide will plow 4 acres a day at any time, and often as much as 5 acres per day." Most of the plowing in California is done with gang-plows, and we have not as yet learned half the value of these plows, on suitable soils, in the eastern part of the country. (We recently saw a ¼ acre nattisomely plowed in 45 minutes with one of these plows, with one pair of heavy horses and one driver, and the horses were not overworked).

**Effects of Impure Water.**—"W. W. S.," Rockford, Ill. The too rapid souring of milk is frequently the effect of impure water which has been drank by the cows. When the stock water is derived from ponds and sloughs, it is always contaminated with numberless microscopic vegetable forms and myriads of germs or spores of this minute vegetation. These accompany the decomposition of organic matter contained in the water. When this impure water is drank by a cow, these germs or spores are absorbed along with the water into the blood, being so exceedingly small that they pass through the absorbing glands and vessels of the intestines with ease. In the blood these spores or seeds grow, and if very numerous may become the cause of those blood diseases commonly known as "murrain," "black leg," "red water," &c. In any case as they pass into the circulation they must necessarily affect the milk which is derived from the blood. When the milk is exposed to the air, these minute organisms grow very rapidly and change the character of the milk, causing the formation of acid and then rapid decomposition. The spores and plants cannot be destroyed at a less heat than that of boiling water, and it is doubtful if that heat will destroy all of them. A heat of 120 degrees assists their growth instead of arresting it, and this may account for the fact that heated milk sours more rapidly than the cooled milk. The only remedy is to use well water for the cows, or water from deep underground cisterns.

**Effects of Forests on the Rain-fall.**—"A. S.," Olathe, Kansas. The character of the present season will probably have the effect of modifying the views of those persons who have been led into the error of supposing that the quantity of rain-fall depends upon the existence of forests. The past summer has been one of extraordinary moisture in parts of the country where there are no forests, as in Kansas, Nebraska, and Eastern Colorado, and of drouth in places where forests abound as in Northern Minnesota and Canada. The truth probably is that the development of meteorological effects, such as the fall of rain, the course of the winds, etc., depends upon causes which are not bounded by small areas, or even such a large area as that of our own continent. The destruction of a thousand or two square miles of woods is but a small thing in comparison to the other influences which affect the rain-fall of the whole world. Forests act as reservoirs of moisture, holding it until it is distributed gradually by means of springs, streams, and slow evaporation, and thus prevent floods which never occur disastrously in wooded localities. They also moderate the heats and colds of the season just as they moderate the distribution of water. They also act as a barrier against the excessive force of the winds. They are therefore indispensable to our comfort, and where they do not exist naturally, should be planted as rapidly as possible. The whole surface of the earth cannot be given up to cultivation, any more than a man's whole life can be given up to work; some portion must be left fallow and to rest; and to grow timber is an actual rest to the land.

**When to Plow Under Clover.**—"R. J. H." If oats are to be sowed on a clover sod, we would plow the sod in the spring and sow the ground immediately while the soil is mellow and fresh. Oats do very well on a newly turned sod.

**Ice House.**—"R. P.," Woodbury, Md. Plans of ice houses were given in the *Agriculturist* of October, 1870, November, 1871, and October, 1874. These are of different style of construction, but the principle is the same in all of them.

**The Use of Lime.**—"E. N. S.," McMillan's Station, E. Tennessee. It is impossible to say whether this or that soil can be improved by lime without experimenting. The proper way is to scatter a certain quantity of lime, say ten bushels upon a quarter of an acre of land and wait to see the effect. If it is found to pay try again in a larger way, on a whole field. Generally clay soils and those full of peaty or vegetable matter are improved by lime; but it is not a cure-all or panacea for all sorts of poor land. As in human diseases, so in sick or defective soils, there is no cure-all; the claim that certain fertilizers are good for all soils, is as much quackery as the same claim for a medicine. Experiment with observation is needed. The investigations of science are coming to help us to less hazardous and less costly experiments, ere long.

## "Walks and Talks" Correspondence.

WHICH IS THE BEST GRAIN DRILL?—"W. H. H.," Milton, Pa., writes: "I have no grain drill, and want to get one of the best. Of the many kinds, which shall I select? The agent for the 'Champion' will convince one that their's is the best."—If he "convinces" you of this fact, buy it by all means. It is a good drill.—"The agents for the 'Farmer's Favorite' tell you to buy no other than a double force-feed drill, while those of the 'New Gearless Buckeye,' would have you believe that in all essential points their's excels all others. Now how can a farmer determine which is the best?"—You must hear all that is said, examine carefully for yourself, and act according to your best judgment. I have seen the "Champion" at work, have tried a "Buckeye" drill belonging to a neighbor, and own and use a "Farmer's Favorite." These are all good drills, but I cannot undertake to decide which is the best. One thing I can say, you had better get a drill that has a good manure attachment, and if you have many stones in your fields, you had better get rubber springs to the coulters.

MANURING CORN.—"W. J. S.," Calhoun Co., Iowa asks how I manure corn in the hill, whether the manure is put under or over the corn, or on top of the ground. I have not manured corn in the hill for several years, and should not think it would pay an Iowa farmer to do so. [The fine roots of corn spread out through the whole surface soil, and find manure anywhere in it. A *little* in the hill, on poor soils, sometimes gives the young plants a good start.—ED.]

SOWING WHEAT ON GOOD LAND.—"J. W. W.," of Wisconsin, writes that he "lives in the Chinch-bug region, but believes that good farming will arm us against them."—He sends me a sample of the Diehl wheat. It is whiter than my own. He has twice taken the first prize at the Wisconsin State Fair with it. He also raises the Fultz wheat. It is good this year.—"The one lesson I have learned thus far," he writes, "is not to sow winter wheat on ground which I do not believe is fitted for it. This may seem trite to you, but it is something for a western farmer to learn."—It is something which farmers everywhere would do well to think about. I try to live up to this rule myself.

THE TRIALS OF FARMING.—We know that trials lead to patience, and patience experience, and experience hope, and if it was not for hope, what should we amount to? Now trials are the common lot of farmers. And it does not matter where we farm, east or west, north or south. A farmer and minister in Nebraska has favored me with several letters, giving his experience, and telling me of his hopes and disappointments. Last year the grasshoppers did him a great deal of damage.—"This year," he writes, "I rented my farm, but by the wet weather some 25 acres got into sunflowers, so that the renters did not harvest the wheat, and now they refuse to cut off the sunflowers. The balance of the crop is very poor, on account of the wet weather and weeds. Some 20 or 25 acres of barley was taken away by the flood. Now I will farm myself another year."—That is right. What is needed is a better system of farming.

MANGEL WURZEL OR BEETS VS. CARROTS AND PARSNIPS.—Steele Brothers, La Porte, Ind., ask the following questions: 1st. "In what respect do you consider mangel wurzel better than Lane's improved sugar beet?"—I do not suppose there is now any difference.—2nd. "Do you consider beets better, pound for pound, than parsnips and carrots for milch cows?"—No. Precisely the opposite.—3rd. "Or do you prefer the mangels because so much more food can be raised per acre?"—Yes; and because they require less labor in weeding and hoeing.

GRASS FOR WOOD LOT.—"R. S. E.," Akron, Ohio, says that I once gave him advice that was of use to him, and now he writes that he has a piece of wood-land, high and dry, and not heavily timbered, still so heavy that grass does not grow upon it. He is short of pasture, and wants to get it into grass; he asks: "Would it pay me to clean out all of the underbrush, logs, and rubbish, drag it thoroughly, and sow it to grass seed, and if so, what kind or kinds would be best?"—I do not know, I have just such a lot, and my own plan is to sow timothy, Kentucky blue-grass, and red-top, without harrowing or other preparation.

PLEASE WRITE AGAIN.—William Denny, of Greenville, writes me a letter enclosing a stamp for reply, but he forgets to tell in what state he lives, and the postmark on the letter, as usual in such cases, is illegible. There are 26 Greenvilles in the United States. [An astonishing number of letters go unanswered for this very reason; we get stamps to pay for a reply "by return mail," and have no idea where the writer lives.—ED.]

WHEN TO APPLY LIME.—"C. H. S.," of Richfield, writes that he has "a fifteen acre field lying on top of a limestone ridge. It laid under blue-grass 8 or 10 years until 1873. I then fallowed it in the spring and cultivated four times through the summer, and sowed wheat, and seeded with clover in the spring of 1874. The wheat winter-killed, and the hot, dry weather in July burnt up the clover, except on a few small spots of lighter soil. Now there is nothing on the field but blue-grass and wild turnips. My object is to get it into clover, and I thought of sowing it with oats next spring and seeding down. There is a heap of 1,600 bushels of lime in the field which is to be spread upon it. Would you haul the lime on the field now, and plow it in the spring, or would you plow now, and put the lime on in the spring and cultivate it?"—The better plan, perhaps, would have been to have summer-fallowed the field, plowing it three times, and then after sprinkling the lime and harrowing or cultivating it in, sowed to wheat and seeded with clover in the spring. The next best plan would be to break it up as early as possible in the fall, cultivate and harrow the surface and then plow it again in October or November, and leave it rough for the winter. Sow the lime on in the spring and seed down with barley or oats. Mr. C. H. S. asked me to answer his letter by mail, but he did not tell me what *State* he lives in.

LAMB OR MUTTON.—"R.," Salem Co., N. J., writes: "Will it pay to feed lambs, common stock, until fall and then sell them, as I believe is your plan, when we can get from ten to twelve dollars a pair for them as soon as they are fit to commence shipping, about Easter?"—No. It will pay far better to sell them early to the butcher. I have never recommended keeping lambs until fall and then selling them. I would keep them until the next spring and sell them after shearing. I can make grade Cotswold sheep weigh 150 lbs. at 12 to 15 months old, and I have thought that in some sections this might pay bet ter than selling lambs.

SOUTH-DOWN OR COTSWOLD.—The same correspondent asks: "Is it best to keep a Cotswold or South-Down to cross with common ewes?"—I believe in New York the butchers will pay more for grade South-Down lambs than for long-wooled, white-faced lambs. And on this account when lambs are raised solely to sell early to the butchers, some of the black-faced breeds, such as the South-Down, Hampshire-Down, or Shropshire-Down, will be more profitable than the Cotswold or Leicester. In saying this I am not admitting that the lambs are really any better, but that people think so, and it is well for us producers to humor our customers. But if you are going to raise lambs for mutton and wool, selling perhaps the ram lambs to the butcher early, I should much prefer to use a pure Cotswold ram.

SALT FOR PIGS.—"R.," Mix say 10 parts sifted ashes, 2 parts salt, and 1 part sulphur, and let the pigs eat all they will of it. I would not compel them to eat salt by mixing it with their food.

ESSEX HOGS, ORCHARD GRASS, BONE-DUST, ETC.—I have received the following from West Virginia: "Are the Essex hogs as quiet as the Chester?"—*Ans.* Much more so.—"What is the average weight of Essex hogs at one year old with very ordinary feed?"—*Ans.* I cannot tell what is meant by *very* ordinary feed. If you mean skim milk and slops from the house, with a little mill feed and corn-meal in winter, or a run with cattle eating corn, the good clover pasture in summer, and the run of the stables in the fall, and then finished off with corn for a few weeks, good grade Essex should weigh 300 lbs. at 12 months old. But if "very ordinary" feed means something little more than a starvation diet, they would probably weigh from 75 to 100 lbs...."I wish to sow a piece of thin and rather wet land with rye and get it set in grass until I can drain and manure it. Which is the best, Kentucky blue-grass or orchard grass?"—*Ans.* I think it would be better to seed some timothy-seed with the rye..."My land will produce about 5 bushels of wheat per acre without manure; will it pay to buy bone-dust and sow on the wheat?"—*Ans.* If you could get good bone-dust for $15 or $20 per ton, it would pay you in the end, but probably not the first year. Peruvian guano would produce a better effect on the wheat, and would help the clover afterwards. Your main dependence must be on good cultivation and on feeding more stock...."I want to make 150 two-horse loads of manure the coming winter. I think of hauling enough leaves to make half the amount, and put them in the yard where they will soak up all the waste from the stables, and during the winter pass enough through the stables as bedding, to make up the other half. Can I make that much with 2 horses and 4 hogs?"—*Ans* If you draw leaves enough you can. But you should try to keep more hogs and sheep, even if you have to buy feed for them. I like your pluck and spirit, and you are on the right track. But when I think of you gathering leaves to soak up the liquid in the yard from 4 hogs and 2 horses, I can but wish you had a large herd of good hogs to care for.

SWELLINGS ON HOGS.—"W. C. W., Ind., has a sow that has "hard lumps all over her."—Are they not caused by the other sows fighting her? Open them with a lance or sharp knife and you will probably find them full of blood and water. Continue to let her have a little better food than the other pigs she is running with. This, as she is a breeding sow, will be better than shutting her up by herself.

BONE-DUST.—Mr. Lewis Schilling, of Ohio, sends me a sample of his "odorless bone-dust," and wants me to show it to the Deacon and the Squire, and then send him an order for ten tons of it so that we can raise some "Centennial wheat."—This is asking too much. I do not want the Deacon to beat me again on wheat the coming year, and I do not want to pay $600 for ten tons for my own use. The same amount of money spent in buying malt combs or bran will give me as much nitrogen, phosphoric acid, and potash, and get a good deal of pork, mutton, wool, milk, and butter into the bargain.

ESSEX HOGS.—"T. H.," Keokuk Co., Iowa, writes: 1st. "What color are the Essex?"—*Ans.* Black.—2nd. "Are they docile?"—*Ans.* Yes, more so than any other breed I am acquainted with.—3rd. "Do they fatten easily when young?"—*Ans.* Yes.—4th. "Are they hardy?"—*Ans.* When they have got their growth they will stand starvation and neglect as well as the commonest scrub, but when young, like all other high-bred animals, they require good care and good feed, just such care and feed as any good farmer gives common pigs.—5th. "Will they cross well on grade Poland China sows?"—*Ans.* This is precisely what I recommend them for. A grade Poland China, Chester White, or Berkshire sow put to a pure-bred, fine boned, well formed Essex, will give you the perfection of a hog for bacon, pork, hams, and lard.

## Catalogues Received.

The following catalogues have come to hand since the last list was published in the July *Agriculturist.*

### SEEDS.

LAW, SOMNER & Co., Melbourne, Australia. A very complete catalogue of vegetable and flower seeds, together with a special chapter on the grasses and forage plants which do well in the climate of Australia.

### PLANTS.

GEORGE SUCH, South Amboy, N. J. Catalogue of Stove and Greenhouse plants, including many rare Palms and Orchids.

E. T. TEAS & Co., Richmond, Ind. Catalogue of Greenhouse and Bedding Plants, with a special list of Roses, including many of the newer sorts.

WILLIAM ROBINSON & SONS, Tooting, London, S. W. England. A very large list of Plants both tropical and hardy, and including many of our native species.

J. C. SCHMIDT, Erfurt, Germany. A Catalogue of Dried Flowers, Grasses, and other articles used by bouquet-makers.

### NURSERIES.

Fall is the season during which many persons prefer to plant out fruit-trees, so that most nurserymen prepare a special circular for the fall trade. The following are of the above sort:

ATWOOD, ROOT & Co., Geneva, N. Y. CALKINS & BROOKS, Bricksburg, N. J. ROBERT DOUGLAS & SONS, Waukegan, Ill. A. HANCE & SON, Red Bank, N. J.; list of Peach and other Fruit-buds. WILLIAM HOLLAND, Plymouth, Indiana. SAMUEL KINSEY, Dayton, Ohio. THOS. H. LESLIE, Ipava, Ill. WILLIAM H. JOHNSON, Ivesdale, Ill. E. MOODY & SONS, Lockport, N. Y. TEBO NURSERY Co., Clinton, Mo. S. B. PARSONS & SONS, Flushing, N. Y. JAMES O. SHELDON, Geneva, N. Y. JOHN WAMPLER, Carthage, Mo.; Amsden Peach.

### AUTUMN BULBS.

BEACH, SON & Co., No. 7 Barclay street, N. Y. Wholesale Catalogue.

LONG BROTHERS, Buffalo, N. Y. Catalogue of Floricultural Stock.

J. M. THORBURN & Co., 15 John street, N. Y. Descriptive Catalogue of Bulbs.

JAMES VICK, Rochester, N. Y. The last number for the year of Vick's Quarterly, contains, besides the descriptive list of hardy bulbs, other interesting matter useful to the amateur, as well as professional florist.

### MISCELLANEOUS CATALOGUES.

CHAS. G. BLATCHLY, Philadelphia, Pa. Circular descriptive of Horizontal Ice Cream Freezer.

CAPRON WRINGER Co., Hudson, N. Y. Price-list of Clothes Wringers.

IRA & IRO COE, Quincy, Ill. Patent Fruit-Gatherer.

HILL'S ARCHIMEDEAN LAWN MOWER Co., Hartford, Conn. Descriptive Circular.

E. E. LUMMUS, Boston, Mass. Manufacturers of Holbrook's Seed Drills.

STANDARD LAUNDRY MACHINERY Co., Boston, N. Y. Complete Catalogue of all improved Laundry Machinery.

### FARM IMPLEMENTS.

The FURST & BRADLEY MANUF'G Co. of Chicago, Ill. BRADLEY MANUF'G Co. of Syracuse, N. Y. DEERE & Co. of Moline, Ill., whose specialties are Gang-Plows, Cultivators, Breaking Plows, and other implements.

WYCKOFF & MCDONALD, of Hightstown, N. J., makers of a Potato Digger, and Riggs' Patent Furrower.

W. H. BANKS & Co., of Chicago, Ill., manufacturers of Corn Shellers, Horse Powers, and of the Dodge Excelsior Hay Press.

The EAGLE MOWING & REAPING Co. of Albany, N. Y., make the W. A. Wood's Improved Mower and Reaper.

SCHENCK & SHERIDAN, Fulton, N. Y., manufacturers of the Torsion Wagon Springs.

PHILLIP S. JUSTICE, 42 Cliff st., N. Y., makers of the Galvanized Elastic Wire Cable and Iron Posts for fences.

Portable Mills of all kinds made by EDWARD HARRISON, New Haven, Conn.

Sorgho Hand-Book and Catalogue of Sorgho machinery issued by the BLYMYER MANUF'G Co. of Cincinnati, O.

### WINDMILLS.

The U. S. WIND ENGINE Co., Batavia, Ill., makers of Halliday's Windmills and Pumps. ECLIPSE WINDMILL Co. of Beloit, Wis. C. T. EDWARDS, Moline, Ill., makers of the Moline Windmill.

## State, County, and other Fairs for 1875.

### State, Provincial, etc.

**Sept. 8–Oct. 9.**—Cincinnati Industrial at Cincinnati, O.; Indiana at Indianapolis (9-2); Iowa at Keokuk (27-1); Louisville Industrial at Louisville, Ky. (Sept. 1–Oct. 16); Montana at Helena (27-2); New York at Elmira (27-1).

**Oct. 26–Nov. 1.**—Alabama at Selma; Connecticut at Hartford (5-8); Georgia at Macon (18-23); National Exposition at Rome, Ga., (4-9); North Carolina at Raleigh (12-16); Ohio at Columbus (6-10); Oregon at Salem (11-16); Rhode Island at Providence (5-7); St. Louis Association at St. Louis, Mo., (4-9); Virginia at Richmond (26-30).

### County and Town Fairs.

MAINE.

**Oct. 5-7.**—Androscoggin at Lewiston; Cumberland at West Cumberland; Kennebec at Readfield Corner; Franklin at Farmington (5-6); Hancock West at Bucksport (6-8); Oxford at South Paris (5-8); Lincoln at Waldoboro (12-14); Oxford West at Fryeburg; Sagadahoc at Topsham; Waldo at Belfast (11-13).

MASSACHUSETTS.

**Sept. 29–Oct. 1.**—Housatonic at Great Barrington; Worcester, Southeast at Milford; Franklin at Greenfield (30-1); Norfolk at Readville; Worcester, West at Barre.

**Oct. 5-6.**—Hampden at Springfield; Martha's Vineyard at West Tisbury; Worcester Northwest, at Athol; Berkshire at Pittsfield (5-7); Hampshire, Franklin, and Hampden at Northampton (6-8); Marshfield at Marshfield.

CONNECTICUT.

**Sept. 28–Oct. 1.**—Middlesex at Middletown.

**Oct. 5-7.**—Danbury at Danbury; Guilford at Guilford (13).

VERMONT.

**Sept. 30–Oct. 1.**—Washington at Montpelier.

**Oct. 5-8.**—Orange at Bradford.

NEW YORK.

**Sept. 27–Oct. 2.**—Central New York at Utica; Madison at Oneida (28-1); Newburgh Bay Hort'l at Newburgh (29-1); Wayne at Palmyra (30-2).

**Oct. 5-7.**—Madison at East Hamilton; Schoharie at Schoharie; Seneca at Waterloo; Suffolk at Riverhead; Yates at Penn Yan; Eastern New York at Albany (5-8); Sangerfield and Marshall at Waterville (5-6); Schuyler at Watkins (6-8); Steuben at Bath.

NEW JERSEY.

**Oct. 5-6.**—Burlington at Mount Holly; Somerset at Somerville (5-6); Warren at Belvidere (5).

PENNSYLVANIA.

**Sept. 28–Oct. 1.**—Northumberland at Sunbury; Lehigh at Allentown (29-2); Westmoreland at Greensburgh; Fayette at Brownsville (30-1); Greene at Waynesburgh; Washington at Washington.

**Oct. 4-7.**—Crawford at Titusville; Bucks at Doylestown (5-8); Northwestern Penn. at Erie; Columbia at Bloomsburg (13-15).

OHIO.

**Sept. 28–Oct. 1.**—Crawford at Bucyrus; Hardin at Kenton; Harrison at Cadiz; Huron at Norwalk; Logan at Bellefontaine; Lucas at Toledo; Muskingum at Zanesville; Preble at Eaton; Southern Ohio at Dayton; Stark at Canton; Tuscarawas at Canal Dover; Wood at Tontogany.

**Sept. 29–Oct. 1.**—Delaware at Delaware; Lake at Painesville; Medina at Medina; Hancock at Findlay(29-2).

**Oct. 4-7.**—Butler at Hamilton; Knox at Mt. Vernon (5-7); Mahoning at Canfield; Ottawa at Port Clinton; Champaign at Urbana (5-8); Licking at Newark; Marion at Marion; Union at Marysville; Gallia at Gallipolis (6-8); Greene at Xenia; Hocking at Logan (7-9); Carroll at Carrollton (13-15); Central at Orrville; Fairfield at Lancaster (13-16); Wyandotte at Upper Sandusky (11-14).

INDIANA.

**Sept. 27–Oct. 1.**—Greene at Linton; Loogootee at Loogootee; Jay at Portland (28-1); La Grange at La Grange; Prairie Farmer at Francesville; Lake at Crown Point (29-1); Spencer at Rockport (28-2).

**Oct. 4-9.**—Boone at Lebanon; Richmond Industrial at Richmond; Northeastern Indiana at Waterloo (5-8); Noble at Ligonier; Wells at Bluffton; Knox at Vincennes (11-16); Worthington at Worthington (4-10); Warrick at Booneville (12-16).

ILLINOIS.

**Sept. 27–Oct. 1.**—Christian at Taylorsville; Marion at Centralia; Wabash at Mt. Carmel.

**Sept. 28–Oct. 1.**—Adams at Payson; Clay at Flora; Crawford at Robinson; De Kalb at Sycamore; Fulton at Avon; Gallatin at Shawneetown; Greene at Carrollton; Henderson at Biggsville; Jo Daviess at Galena; Kankakee at Kankakee; Livingston at Pontiac; Macoupin at Carlinville; Marshall at Wenona; Mason at Havana; Mercer at Aledo; Montgomery at Litchfield; Pike at Pittsfield; Fayette at Vandalia (29-1); Randolph at Sparta; Ford at Gibson City (30-3); Jasper at Newton (29-2); Kane at Geneva; Lake at Waukegan (27-2).

**Oct. 5-8.**—Edwards at Albion; Effingham at Effingham; Iroquois at Onarga; Jo Daviess at Warren; Knox at Galesburg; Lawrence at Lawrenceville; Peoria at Peoria; Pope at Golconda (6-9); Clay at Louisville (12-15); Jersey at Jerseyville; Williamson at Marion; Hardin at Elizabethtown (13-16); Madison at Edwardsville (28-31).

DELAWARE.

**Oct. 6-8.**—New Castle at Middletown.

WEST VIRGINIA.

**Sept. 28–Oct. 1.**—Macon at Point Pleasant.

MICHIGAN.

**Sept. 29–Oct. 1.**—Lenawee at Adrian.

IOWA.

**Sept. 28–Oct. 2.**—Page at Clarinda; Wayne at Corydon (Oct. 4-6).

KANSAS.

**Sept. 28–Oct. 1.**—Neosho Valley at Neosho Falls; Allen at Iola (Oct. 6-9).

CALIFORNIA.

**Oct. 4-10.**—Santa Clara at San Jose; Santa Cruz at Santa Cruz (7-9).

## Table Knives and Forks of ALL KINDS,

And Originally Exclusive Makers of

And the **"Patent Ivory"** or Celluloid Knife (**White Handle**). These Handles **never get loose,** are not affected by **hot water,** and are the **most durable Knives known.** Always call for the "Trade-Mark," "MERIDEN CUTLERY COMPANY," *on the blade.* They are **good.** Sold by all dealers in Cutlery. Made by **The MERIDEN CUTLERY CO., 49 Chambers St., New York.**

## LAMB KNITTING MACHINE.

Is the **only** Machine that can knit all sizes of work, and narrow and widen it; that can **shape** and COMPLETE, without hand-finishing, seamless Hosiery, Gloves, and Mittens, or knit them in **all sizes;** or knit Ribbed, Double, and Fancy stitches for Underwear, Jackets, Shawls, Scarfs, etc. It knits over **25** different Garments. Over **100** per cent Profit in Manufacturing Knit Goods. The Farmer trebles the value of his Wool by converting it into Knit Goods. Women make **$5.00** a day with it. Agents wanted. Send stamp for Samples of work, and **reduced** Price-List. Address LAMB KNITTING MACHINE CO., at Chicopee Falls, Mass.; Cincinnati, O.; Chicago, Ill., or 922 Chestnut St., Philadelphia.

## ARMOUR FAMILY KNITTING MACHINE

Will do more and better work than any other machine made,

Is the simplest, most practical, cheapest and **Best Knitter in the World.**

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The BICKFORD AUTOMATIC FAMILY KNITTING MACHINES will knit anything ever knit by hand, in far better style, and a hundredfold faster. A good operator will knit from 30 to 40 pairs Men's Socks a day! These machines are simple, durable, and cheap. Every family should have one. General and Local Agents wanted everywhere. For Circulars and full particulars, address

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in selling our Patent Water-proof Clothes Line. Nothing like it. No competition; profits large, and sell in every family. Sample and terms free.

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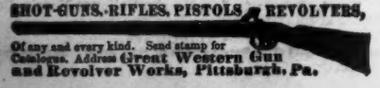

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A novel and useful invention. Will save first cost in a week. Automatic in its operations, when the vessel is full no more fluid can enter. Especially handy in filling tin cans, jars, and other opaque vessels. State, County and Town Rights for sale. Send for circulars.

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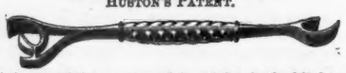
## Housewife's Friend and Cook Stove Companion.

HUSTON'S PATENT.



This is one of the most useful articles in the kitchen, for adjusting all the parts and fixtures of the Cook Stove, and for removing without the aid of towels, cloths, or holders, bread, pies, cakes, puddings and almost every description of hot dishes from the oven, without burning or soiling your hands. Also for adjusting broken lids, or lids when the wires are broken or burned out.

Agents wanted in every town. Samples sent by mail, post paid, for twenty-five cents; five for one dollar. Address enclosing money for sample,

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Once using, will

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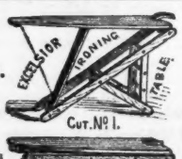
WHEN SET UP FOR USE,

Firm and substantial. When folded, (see cut No. 2) are as easily taken care of as a common board.

Write for Circulars and terms to agents.




CUT. № 1.

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**Active Canvassers Wanted Everywhere.**

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**NO DUST! NO SMELL!**

**Always soft and ready for use without a dish.**

It will do more work with less labor and expense, and give a more elegant and lasting lustre than any Stove Polish ever produced. *A stove can be dressed on delicate carpet without soiling it.* Samples sent by mail on receipt of 10 cents. Manufactured only by

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**SAVE MONEY** by purchasing the best Piano-Forte. Do not decide what make to get until you write for our Illustrated Circular, which we mail free. The "Arion Piano" contains four patented improvements that make it *more durable* than any piano in the market. Write for circular, and mention where you saw this notice.

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## LITTLE GIANT

**Corn and Cob Crusher.**

Manufactured for

**W. H. Banks & Co.,**

**34 & 36 S. Canal Street, CHICAGO.**

Corn Shellers, Feed Cutters, Farm, School and Church Bells, Agricultural Boilers, Wood Sawing Machines, Tread and Sweep Powers, etc.

## B. F. RANDELL'S Grain Separator,

**CLEANER AND GRADER.**

THE ATTENTION of the Farmers is respectfully called to B. F. Randell's justly celebrated Improved Fanning Mill, Seed Cleaner, Grain Separator and Grader combined, a recent invention which has attracted very marked attention throughout the Central and Western States, where it has been introduced, and which is now being manufactured for the EASTERN States, at Auburn, N. Y., and Harrisburg, Pa., as below.

Until the invention of the "Randell Grain Separator" all machines for cleaning grain known as "Separators," have been at the best mere SEED CLEANERS, too expensive for general use and altogether too slow, complicated and impracticable for the general purposes of a farming mill. Therefore, for the information of those who are looking for something cheap, rapid and practicable, the undersigned respectfully submit the following extracts from testimonials of farmers and grain men to the merits of the Randell Improved Seed and Grain Cleaner or Separator and Grader.

FROM THE WELL-KNOWN FARMER, ALFRED HALE, OF LYONS, N. Y.

"This 26th day of May, I tested the RANDELL SEPARATOR in my Granary, and it proved to have important advantages over the present Fanning Mills; so much so that I gave my order for one, notwithstanding I have at this time two of the other mills. ALFRED HALE."

**"It is the only real Separator, Cleaner and Grader in the United States.**

"It works upon the principle of GRAVITY, an entirely NEW PRINCIPLE in grading grain, which gives the farmer perfect control of Cleaning, Separating or Grading his grain, and works to perfection.

JOHN HOFFER, Paxton Mills, Harrisburg, Pa."

FROM FARMER MURDOCK, AUBURN, N. Y.

"The Randell Separator is the first and only machine I ever saw that could separate OATS from BARLEY, or SPRING WHEAT, with any kind of expedition. It is not a mere fanning mill, nor a mere seed separator for cleaning Timothy or Clover, or fitting grain for seed, but both, combining the rapidity of the fanning mill with the perfection of a separator. A. H. MURDOCK."

"The Randell Separator is constructed upon an entirely new principle of taking advantage of gravity, whereby the farmer is enabled to separate Oats from Wheat or Barley rapidly for market, and at the same time get a grade of the soundest and heaviest kernels, pure of Oats and Cockle for seed.

ORLANDO LEWIS, Stone Mills.
NEYHART & CO., Empire Mills.
SERVIS & CO., Premium Mills."

Some time during this season each grain county will be canvassed by competent salesmen, who will exhibit the working of the machine and take orders for next fall's delivery. To avoid any mistake, remember the name of B. F. Randell will always appear on the drum of his "Separator."

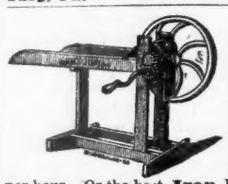
☞ Be sure and read editorial in the COUNTRY GENTLEMAN of May 13th.

Agents wanted for all the counties in the State. Price $36 delivered on cars, and liberal discounts to agents.

We think it but the strictest justice to YOURSELVES, that we ask you to withhold your purchase of other mills, till after you have first seen and tested for yourselves this wonderfully RAPID, SIMPLE and COMPLETE MACHINE.

For Circulars, for the State of N. Y., address the Randell Grain Separator Co., **Auburn, N. Y.**

For the States of Pennsylvania, Maryland, Delaware, and New Jersey, address Randell Grain Separator Co., **Harrisburg, Pa.**



Do you want for your own use, or the Agency for the best **Self-Feeding Hay, Straw** and **Stalk Cutter,** in America? $16.00 Size by *HAND-POWER*, cuts 30 bushels per hour; $19.00 Size cuts by *POWER*, 180 bushels per hour; larger Sizes, 2 tons per hour. Or the best **Iron Handle Lever Cutter,** for Straw or Stalks. $10.00 Size cuts 20 to 50 bushels per hour. Machines delivered at **Cincinnati, Ohio,** or **Chicopee Falls, Mass.,** as desired. Need not be paid for till tried on the farm, and found satisfactory. Allowance made for freight. Circulars free.

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## Stone and Ore Breaker

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Can be set up with ease—is an absolute protection against cattle—is ornamental, and practically indestructible. Is superior to every other form of enclosure.

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# Essex Pigs.

## PRICES REDUCED.

I will sell fall pigs, pure bred Essex, at the following reduced rates:

**Two Months Old.**—Boar $18; boar and sow, not akin, $35; boar and two sows $50; boar and three sows $60.

**Three to Four Months Old.**—Boar $20; boar and sow $40; boar and two sows, not akin, $55.

Older pigs, boars, and choice breeding sows, 25 cents per pound. About half the money should accompany the order Balance C. O. D. I guarantee the safe delivery of the pigs.

Address, **JOSEPH HARRIS,**
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**ENGLISH YORKSHIRE PIGS.**
From stock imported directly from Yorkshire, England. They received 1st premium at N. E. Fair, Sept., 1873. These pigs are good size, light haired, white color, prolific, and ready fatteners. Boar pig, 10 weeks old, $15.00. Sow, same age, $10.00. Boar and Sow, not akin, $20.00. Boar and 2 Sows, not akin, $30.00. Shipped to destination at my risk, and warranted as represented. Ready for shipment Oct. 1st Also Holstein Short-horn Cattle. Marlborough Stock Farm, JO . KNIGHT, Propr., Newburyport, Mass. P. O. Box 332.

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Ohio Improved Chesters, received First Premiums in a majority of the States. Send for their description, and Choice Poultry, and get ready for the Fall Fairs. L. B. SILVER, Cleveland, Ohio.

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**Black Bass** for stocking ponds—**Pekin Ducks, Bronze Turkeys,** descended from a pair weighing 92 lbs. **Jersey Cattle,** A. I. C. C. R., and Cotswolds, at low prices. Address W. CLIFT, Mystic Bridge, Ct.

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Breeder and Importer of thoroughbred Alderney and Ayrshire Cattle; Clydesdale Horses; Cotswold Sheep; Berkshire Swine, and Fancy Poultry The Stock bred at Beacon Farm is imported, and from the best imported sources, and has won the unqualified admiration of the best judges. They have taken the first prizes at Provincial Shows, and at leading State and County Fairs in Canada and the United States.

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**N. GUILBERT, Evergreen Farm, Gwynedd, Pa.,**
Importer and Breeder of Improved Blooded Live Stock, Horses, Cattle, Cotswold and Southdown Sheep, Chester, Berkshire and Yorkshire Pigs, Toulouse, Bremen and Hong Kong Geese, White China, Wild, Cayuga, Rouen, Aylesbury and Musk Ducks, Bronze, Blue, Buff and White Turkeys, Dorkings, Brahma, Cochin, Guinea and all other Fowl, Deer, Swans, Peacocks, Pigeons, Eggs, &c., at low prices. Best Breeds of Dogs and Maltese Cats, Rabbits, Ferrets, Guinea Pigs, White Mice, &c. Fine Milch Cows always on hand.

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Full Blood Merino Sheep for Sale.—I have some **Rams and Ewes** to spare, of the purest pedigrees, out of *elite* or *chosen* SILESIAN or AUSTRIAN flocks.
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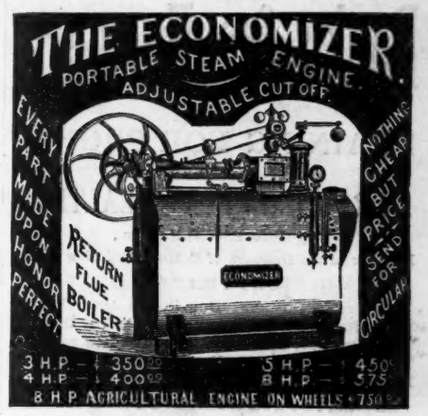
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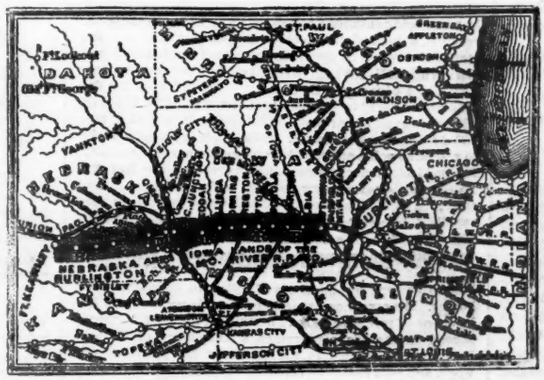


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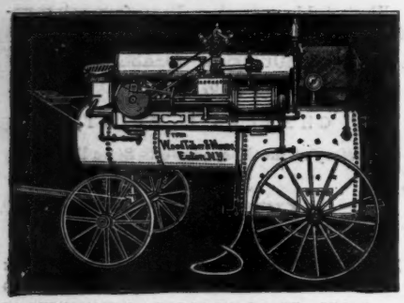

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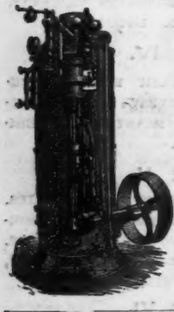

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